





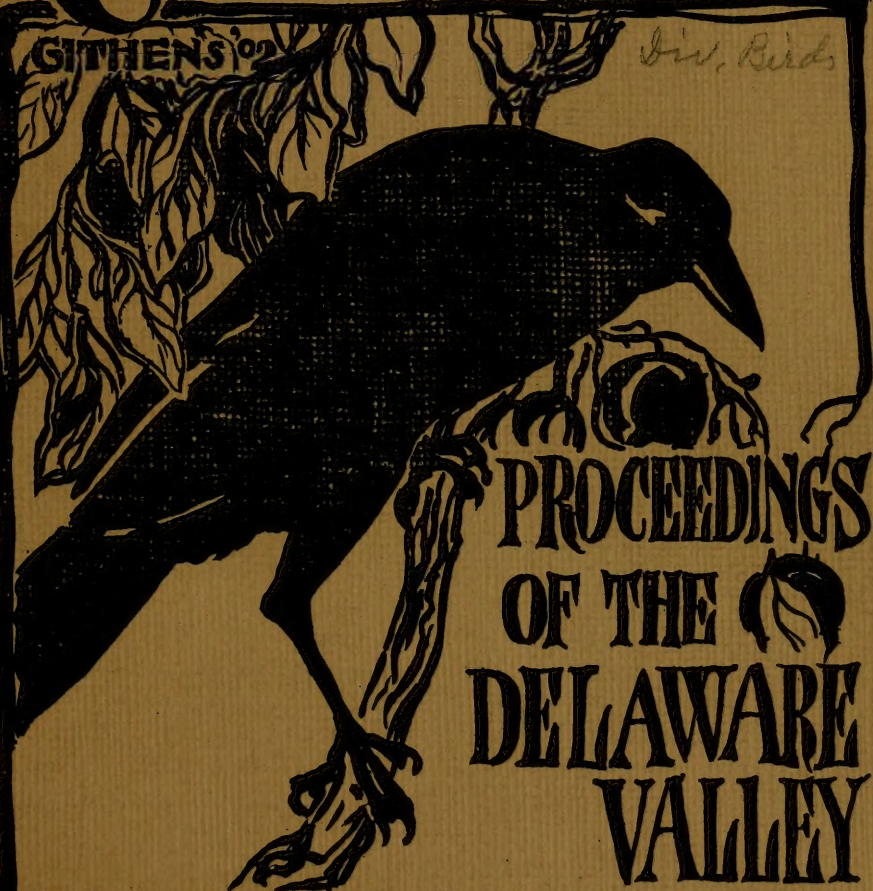


CASSINIA

A BIRD ANNUAL

GITHENS' 92

Div. Birds



PROCEEDINGS
OF THE
DELAWARE
VALLEY
ORNITHOLOGICAL CLUB
OF PHILADELPHIA

1908

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CASSINIA

An Annual Devoted to the Ornithology of
Pennsylvania, New Jersey, and Delaware.

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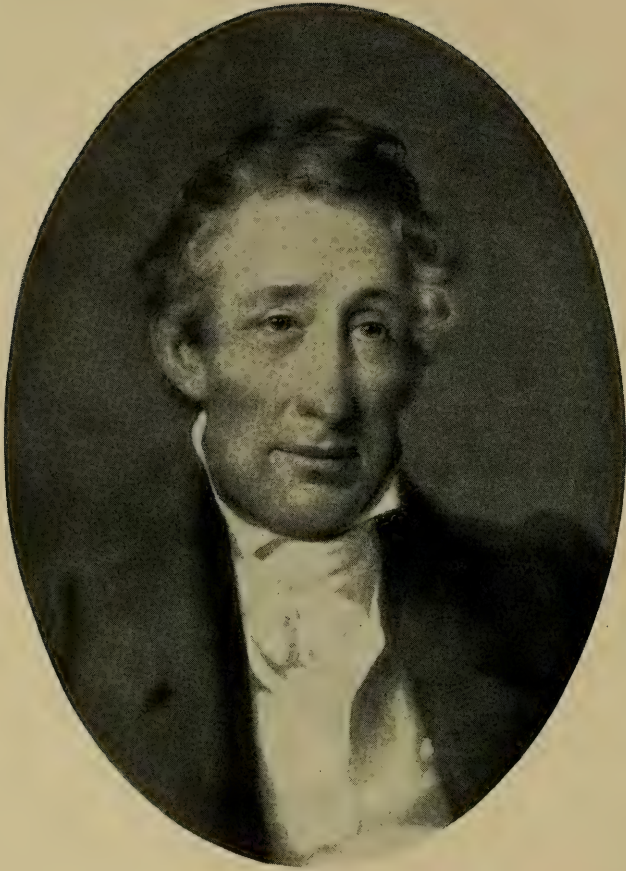
PUBLICATIONS OF THE D. V. O. C.

- The Birds of Eastern Pennsylvania and New Jersey, by Witmer Stone, pp. 176 with two maps and portrait of Alex. Wilson. One Dollar and a-half. (Post paid \$1.62)
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CASSINIA

PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB

No. XII.

PHILADELPHIA, PA.

1908.

George Ord

BY SAMUEL N. RHOADS

Science owes much to men almost unknown to fame and whose names but rarely appear upon the page of the historian or biographer. It is indeed strange that we must place in this class one who accomplished so much, in a quiet, unassuming way, as did George Ord, the companion, patron and literary executor of Alexander Wilson, the ornithologist. The seeker after materials for even a brief memoir of this once honored and respected savant, who, between the years 1815 and 1858 was accorded nearly all the highest offices of trust within the gift of the Academy of Natural Sciences of Philadelphia and the American Philosophical Society, is puzzled at the scarcity of recorded data. When he died, in 1866, the Philosophical Society appointed Isaac Lea to prepare an obituary notice of him, but no such tribute can now be traced either in print or manuscript. By the Academy of Natural Sciences no action whatever was taken.

Consequently, in the brief space of time and pages allotted for this article, only a few facts not already stereotyped in some of the biographical dictionaries can be presented regard-

ing the character and life-work of George Ord. He was born March 4, 1781, but whether in Philadelphia or England I have been unable to ascertain.

According to the Philadelphia Directory of 1796, Ord's father, also named George, was a sea captain, living at 354 South Front Street. This is confirmed by his tombstone in the Old Swedes churchyard, which further states that he was born in Great Britain, March 26, 1711, and died in Philadelphia, October 13, 1806. On the same stone is the notice of his wife Rebecca, who died in 1823 (1825 ?) as nearly as can be deciphered. A further study of the old directories shows that Capt. George Ord became a ship chandler and rope-maker on Willings and Francis Wharf in 1798, and that sometime after, say about 1800 took his son George, Jr., into partnership—"George Ord and Son, Ship Chandlers." Ord's home at that time, and ever afterward, was in his father's house on Front Street. After the death of his father in 1806, young George became partner with his mother, as "George Ord & Co.," in the same business. His mother was a Swede, one of five married daughters of George and Judith Lindemeyer, probably very early settlers in the city. Her parents' graves adjoin those of the Ords, and her married sisters' in a corner against the northwest shoulder of the church. How long Ord actively continued his father's business is not exactly determined, but about 1829 he ceases to be listed as a ship chandler. He was always known to his later associates as a wealthy gentleman of leisure, though far from idle in his chosen scientific pursuits. He married, presumably, about 1815, and had a daughter, who died in infancy, and one son, Joseph Benjamin, who was an artist of much ability in the painting of fruit studies. He was recorded as a portrait painter in 1835 and a picture restorer in 1855. Ord's wife was for many years an inmate of the Pennsylvania Hospital, owing to a mental affliction, and it was largely due to his gratitude for their good care of her that he gave that institution various sums, amounting to about \$20,000, the greater part of which was devoted to a fund for the study and cure of mental diseases.

Just when he began to take an active interest in nature study

is not apparent, but it probably began in youth, and was no doubt stimulated by association with the coterie of more advanced naturalists who finally organized the Academy of Natural Sciences in 1812. He was elected a member and a curator of that body in 1815, and made their vice-president in 1816, a sufficient indication that the worth of his editorial labors on Wilson's Ornithology was being recognized. That his education and literary attainments were already of a high order is not only attested by Waterton's letter of introduction, quoted later, but is further shown by his being appointed one of the original members of the Publication Committee of the Philadelphia Academy in 1817.

How gladly would we know the history of his earlier acquaintance with and growing friendship for Alexander Wilson. We fondly hope there may be old letters yet preserved which will shed more light upon that sacred chapter in American ornithology. Ord was Wilson's junior by fifteen years, and at the time the latter seriously began the preparation of his Ornithology was only twenty-four years old. He accompanied Wilson on many of his bird excursions, and was with him on his last visit to Great Egg Harbor, N. J., in the spring of 1813. It is safe to say that to no single person did the author of the "American Ornithology" owe more by way of personal and financial encouragement than to George Ord. If Wilson had not enjoyed this loyal patronage during his life, or had been deprived of so talented and yet so modest a biographer to finish his uncompleted labors, we can hardly estimate the resultant loss to both the student and the lover of birds in the present generation. The history of Ord's editorial labors in Wilson's behalf are better known to-day than perhaps any other of his literary efforts. For a history of the additional volumes and editions of the "American Ornithology" which he edited, the reader is referred to Dr. Walter Faxon's article in the eighteenth volume of "The Auk," 1901, pages 216-218.

In all these Ord strove to put himself into the background, and for that reason did not receive the credit due him until after his death. His "Life of Wilson," however, appeared under his full name, and it is as the author of that work more than

of any other single publication that he is popularly known, for the majority of his writings were anonymous or signed only with initials. The biographic notices of Ord state that he employed much of his leisure in lexicographic researches. I am informed by his cousin, Mr. Gregory B. Keen, that Ord compiled much data for the first edition of Webster's dictionary. This was used without acknowledgment by Webster, a fact silently resented by Ord until Webster wrote him some years later for assistance on the third edition. In reply Ord reminded Noah of his discourtesy, and being a great admirer of Dr. Johnson wrote him that if he would make his new edition conform to the Johnsonian spelling he would aid him. Webster was compelled to refuse. Soon after, Latham, of London, secured from Ord the whole MSS. of nearly forty years' work in philology, and in every instance where he used it in compiling his new edition of Johnson's Dictionary he makes acknowledgment to the "Ord MSS." Alexander Wilson secured his work of compiling the natural history portion of Bradford's American edition of Rees' Encyclopædia in 1806, and there is little doubt that Ord, as much as any one, secured him this important employment, which might be called the "first edition" of Wilson's "Ornithology." While we have no data at hand to prove it, it is more than probable that Ord assisted Wilson greatly in this labor besides contributing to other departments of this, the largest literary undertaking attempted up to that time in America.

After the death of Wilson, in August, 1813, Ord, then thirty-two years of age, completed the "Ornithology," editing Volume VIII and writing all the text of Volume IX. This work, however, does not appear to have exhausted his energies, for Johnson and Warner, publishers of Philadelphia, induced him to compile the zoölogical portion of their so-called "Second American Edition" of Guthrie's Geography. This was published in 1815. Strangely enough, only three copies of this work are known to exist, namely, Ord's private annotated copy owned by Dr. Solis Cohen of Philadelphia, another lately obtained in Wilmington, Del., by my friend C. J. Pennock of Kennett Square, Pa., and an excerpt of the zoölogical portion

in the library of the Academy of Natural Sciences. Owing to the rarity, as well as the scientific value, of Ord's contribution to this work the writer re-published that portion in 1894. The reader is referred to the Introduction of that reprint for an estimate of Ord's modest services to North American zoölogy in that connection. Briefly stated, it appears to be the first systematic work on the zoölogy of North America by an American. Several species of mammals and birds are there described and named for the first time, and four new bird names there given are tenable. Most of these novelties were secured by Lewis and Clarke's Expedition, then lately returned. On page 314 Ord pays tribute to the labors of his beloved Wilson, stating that he had "published and prepared an account of two hundred and sixty-five species, fifty-four of which were nondescripts, when the Almighty disposer of events saw fit to close his useful labors by death;" and in a foot-note adds: "He left drawings of thirteen species more." Ord was so prominently the loyal champion of Wilson's cause that on more than one occasion he was forced to throw aside his anonymous cloak and openly enter the lists in defense of his deceased friend. The most striking of these contests was waged against Audubon's accusations of plagiarism on Wilson's part made in the last volume of the Ornithological Biography. In Ord's rejoinder, which was published in the Proceedings of the American Philosophical Society (Vol. I, pp. 272 *et seq.*), he places Audubon in a most unenviable light, not only disproving the charge against Wilson, but showing that Audubon had been guilty in more than one instance of stealing from Wilson without acknowledgment. A copy of this article was also sent to the Linnæan Society of London, of which Ord was a Fellow. In his letter of transmittal, a copy of which is in the archives of the Academy of Natural Sciences of Philadelphia, he states:

"There are some circumstances related in it which may give rise to reflections by no means advantageous to the reputation of Wilson's calumniator. However he who resorts to the stillette can have no reason to complain should its point be reverted to his own breast. The career of this adventurer in Great Britain has been truly a brilliant one, he has left an impression on

your community of no ordinary kind but whether it be for good or evil only time can determine."

Ord was a great friend of Charles Waterton, the English naturalist, South American traveler and author. This gifted and rather erratic enthusiast, so much Ord's reverse in many characteristics, was born one year later and died one year earlier than his comrade. They traveled together in England and Europe,* and kept up a lively correspondence, some of which is in the archives of the Academy.

One of the most famous international bird-controversies arose in 1833-'34 between Waterton and Audubon regarding Audubon's disbelief in the use of the sense of smell by the Turkey Vulture in the discovery of its food. Audubon's views were embodied in a paper presented to the Wernerian Society of Edinburgh soon after his arrival in Scotland and which constituted his first publication. It was promptly attacked by Waterton and vigorously sustained by Audubon's admirers in both continents. Swainson, Bachman and a half-dozen more kept the magazines busy in this quarrel. It is supposed that Ord may have instigated this trouble and retired behind the scenes as Waterton's second. A letter from the latter to Ord, dated March 4, 1834, says: "You will see that the Charleston parson [Bachman], Doctors, Surgeons and Professors are up in arms against me and are determined to cut off the Vulture's nose. But do not be alarmed for me, I promise you that I will answer them to your heart's content and tomorrow I shall send up a paper to Loudon for his May number which will make your Philosophers appear very small and put Audubon's claim to literature and ornithology in so clear a light that no one will be in doubt hereafter * * * Audubon's gulled friends and supporters in London are in the highest spirits and feel sure that I cannot answer the Charleston letter. By the first of May next their crowing will cease." Time has proved that Ord and Waterton were on the winning side in this debate.

The following extract from a letter of introduction given by Waterton to Ord, and found among the latter's papers, gives us

* Ord was in Italy in 1823 and in England and France in 1851.

some insight into his character and attainments: "You will find him a most delightful acquaintance, with vast knowledge and extended abilities." Waterton in another letter, after urging Ord to visit him again at his English country seat, says: "I am fully of the opinion that your polished mind was never destined to waste its learning in Pennsylvania's matted woods." Audubon, in this connection, refers casually to Ord's knowledge of languages (Audubon and his Journals, Vol. I, p. 189); when describing a meeting of the Royal Society of London, December 18, 1826, he notes: "Prof. ——— gave a long, tedious and laborious lecture on the origin of languages. * * * It seemed a very poor mess to me. * * * My friend Ord would have doubtless swallowed it whole."

As time advanced and his physical activities lessened, Ord, at sixty years of age, writes under date of 1841: "My natural history studies are nearly at an end. As age creeps upon me I feel the necessity of retirement, but in yielding to that necessity I derive consolation from pursuits which more than counterbalance the pleasure of those which I relinquish." This alludes, no doubt, to his philological studies, which I am assured both by Mr. Gregory B. Keen and Dr. I. Minis Hays of Philadelphia, who were for some years associated with him, were of the most profound character. His valuable library, especially rich in such works, from fear of fire, was removed by him from his house to a room in the Philadelphia College of Physicians. Part of it remains there, part is in the Ridgway branch of the Philadelphia Library, and the remainder was purchased by Dr. J. Solis Cohen of Germantown.

Respecting Ord's personality I am much indebted for a lively description from both of the above-named gentlemen, much of which, however, is hardly germane to a sketch of this character. Dr. Hays remembers him as a tall, rather spare and decidedly stoop-shouldered man, using a cane in his walks about town. An abundant shock of gray hair covered his head, even in old age. He talked deliberately, but once aroused upon a favorite theme, with much enthusiasm. His benign countenance comported well with a tender-hearted, kindly disposition. His literary humility, care and rigorous self-censorship not only

deprived the world of much that was worthy of publication, but was carried to such an extreme that the tasks of his biographer have been increased tenfold.

The portrait which prefaces this sketch was etched from a photograph of the oil painting supposed to have been painted by his son, Joseph Benjamin Ord, now in the gallery of the Academy of Natural Sciences of Philadelphia. It represents him somewhat past middle life.

George Ord lived to be eighty-five years of age, dying in 1866. He was buried in Old Swedes churchyard, Philadelphia, in the old family plot of the Lindemeyers, Swedish grandparents on his mother's side and early settlers on the Delaware. Not far from Ord's grave is the simple monument over the tomb of Alexander Wilson, that congenial and gifted fellow-spirit whom fifty years before his comrade had sadly laid to rest.

A chronological list of George Ord's appointments to honor and service in the two leading American scientific societies of his day are as follows: Elected a member of the Academy of Natural Sciences, September, 1815; Curator, December, 1815, to December, 1817; Vice-President, December, 1816, to December, 1834; and original member of the Publication Committee, 1817 to January, 1821, serving again 1832 to 1833. Elected a member of the Philosophical Society, October 17, 1817; Secretary, 1820 to 1827 and 1829 to 1831; Vice-President, 1832 to 1835; Councilor, 1839; Treasurer and Librarian, 1842 to 1847; and President of the Academy, December, 1851, to December, 1858.

Ord's scientific papers listed in the catalogue of the Royal Society number fourteen, two being in conjunction with Thomas Say. Four relate to birds. His other works comprise the completion of Wilson's Ornithology; two subsequent editions of this work in 1824 and 1828-29, both containing original matter; the "Zoölogy" in Guthrie's Geography; the Life of Wilson and a beautifully written Life of Thomas Say, another of his friends; and one of C. A. Les^equer, together with his philological contributions.



PHOTOS. BY THOS. H. JACKSON.

NEST AND NESTING SITE OF THE MOURNING WARBLER.

The Mourning Warbler in Warren Co., Pa.

BY THOMAS H. JACKSON

I have never met with the Mourning Warbler in my home county of Chester during its spring and fall migrations, although there are a few records of its having been taken here. It was with a good deal of pleasure then, that I found myself listening to the charming song of this bird among the mountains of Warren county, Pa., on the 30th of May last.

Mr. R. P. Sharples and myself reached Warren about 9 o'clock on the morning of that day, and in company with our friend, Mr. R. B. Simpson, started up the valley of Morrison's run, a clear mountain stream that empties into the Allegheny river east of the town. The trees and bushes were dripping from frequent showers, between which the sun occasionally shone with a sultry heat.

As we entered the ravine a song entirely new to me came from a clump of ferns and blackberry bushes. At first I took it to be the well-known melody of the Kentucky Warbler; the first three bars of its song were a reproduction of that bird's, but the latter part of its performance was the liquid melody of the House Wren's song. Mr. Simpson assured us that it was the Mourning Warbler. On this occasion we tried our best to get a good glimpse of the singer, but all we could see was an occasional shadow flitting near the ground, and if approached too nearly the song would cease, and possibly a glimpse of the bird would be had as he disappeared in another part of the thicket.

We found these birds in full song in nearly every favorable locality—with just such surroundings as the Maryland Yellowthroat would choose for its nesting-place—in thickets near the edge of woods, among briar-patches along the roadside, and among the nettles and weeds in the partly wooded bottoms

along the Allegheny river, and in many places they seemed to be equally abundant with the Yellowthroats. In a large clearing or "slashing" about three miles up Morrison's run we heard at least six different males singing, each in his own special territory. Many hours of systematic search failed to locate a nest here, although we must often have been very near to one, as the singing bird simply shifted around from one bush to another within a radius of a few rods.

Between times we found interest in watching a colony of Chimney Swifts flying in and out of the top of a huge hollow pine that had been broken off about forty feet from the ground. In this same clearing a noisy brood of Hairy Woodpeckers had left their nest, and were creeping around over the home tree. A Pileated Woodpecker was calling from the near-by timber. An Olive-sided Flycatcher was busy carrying twigs, broken from a dead hemlock near by, to a group of smaller hemlocks in the middle of the slashing. With a field-glass we could see her carefully arranging them in nest form on a lower, horizontal limb, and frequently uttering her peculiar call in answer to that of the male which perched on the top of a tall dead tree near by, making frequent excursions after insects.

The first nest of the Mourning Warbler that we located was on a bunch of ferns in an open space in the woods, close beside the stream. We saw and heard the birds there frequently, but it was not completed, and was possibly abandoned because of our frequent presence in the vicinity. Another nest with one egg was found on the edge of the cemetery in a clump of briars. It was placed very close to the ground, and though we watched for the bird each time we were near the nest, only at the last visit did we get a sight of her sufficient to make her identity sure. The nest still contained but a single egg, apparently well incubated.

About a mile below the town, and close beside the river, there is a grove of scattering trees covering perhaps six to eight acres of lowland that is subject to overflow at times. Over this entire tract there is a dense growth of nettles, briars, and a variety of rank weeds that covered the ground from two to three feet deep. Two pairs of Mourning Warblers were known to be located somewhere in this jungle, although on that morning,

June 5th, we did not hear their song once; we decided to give the ground a thorough search, and from eight to eleven o'clock worked hard to cover every possible hiding place where the nest might be concealed. Mosquitos, gnats and nettles did not add perceptibly to the pleasure of the search, but as one of our main objects in coming to Warren county was to see and hear the Mourning Warbler in its summer home, no trouble or discomfort was considered in accomplishing this end.

Across the river in the grass flats, ten or twelve pairs of Bobolinks were nesting in the clover, then about knee high, and the males were in constant song, and to me, accustomed to but a few days of their presence in the spring migration, their concert was a great treat.

As we were about to give up the search, Mr. Simpson walked round to the edge of the thicket where it merges into a grass field, and there at the very edge, among the tall weeds, he flushed a bird from the nest. She was off and out of sight too quickly to determine her identity, but as I was photographing the nest she gradually became bolder, and finally both birds came into plain view, proving beyond doubt the identity of our prize. It had the appearance of having originally been placed on the ground, but by the rapid growth of the weeds with which it was entangled had been raised about six inches. The outside of the nest was made of coarse weed-stalks and stems; so arranged that the nest was much broader one way than the other, the greatest width over all being nine inches, while its shortest diameter was but six inches. It was four inches in depth over all, while the cup was two and a quarter inches deep. The second layer was composed of dry oak leaves, and next came a substantial layer of grape-vine bark in strips, some of them a foot long and one-eighth to one-quarter inch in width. The inside lining was a thin layer surrounding the entire cup of the nest, and consisting of strong, hair-like filaments of a reddish color, not unlike in appearance the fruit stalks of the hair-moss, used by the Worm-eating Warbler for the same purpose, excepting that they are much longer and tougher than that material.

The eggs were four in number and measured .81 x .52, .80 x .55, .79 x .55 and .78 x .52 (in hundredths of an inch). The

ground color is pearl, three of them having obscure lilac markings wreathed about the greater end, with a few bolder spots of reddish-brown, the fourth egg being thickly spotted with the brown shade evenly over the entire surface, similar to the eggs of the White-breasted Nuthatch. All of the eggs are quite pointed.

In concluding these notes it would perhaps be of interest to speak of the general character of the bird life as we met with it in Warren county.

The country is such as would naturally attract a great variety of birds. The valley of the Allegheny, at an elevation above sea level of 1100 feet here, has large tracts of meadow lands that furnish a congenial home for Bobolinks, Prairie Horned Larks, Savannah Sparrows, Meadow Larks and other field-loving birds, while the damp, dark hemlock and pine forests in the mountains still found in this county in large and well-preserved tracts furnish a congenial home for the Winter Wren, Olive-sided, Hermit and Wilson's Thrushes and Solitary Vireos, while Black-throated Blue, Black-throated Green, Parula Pine and Blackburnian Warblers were in evidence on every excursion we took into these woods. Occasionally the cry of the Pileated Woodpecker or his vigorous hammering on some dead tree in the depths of the woods proclaimed his presence.

Red-shouldered Hawks were much commoner there than the Redtails are in Chester county, and little parties of them were often seen soaring over the woods as though the parents were teaching the young the art of hunting.

Conspicuous by their absence were the Worm-eating, Black and White, Kentucky and Blue-winged Warblers, as well as the Yellow-breasted Chat, though many of our commoner species seemed less abundant here than in Chester county. It was a pleasure to meet our old winter friends the Juncos, and almost the first nest we found was one of these under the edge of a bank, close beside the path, placed exactly as we often find the nest of the Song Sparrow, with partridge-berry and ferns gracefully overhanging. Four handsome eggs were in the nest, and were apparently well incubated. The Turkey Vulture that is so common in Chester county the year round is there almost an

unknown bird, and Mr. Simpson I believe has the only one taken in Warren county.

In this connection I would like to add that Mr. Simpson's museum of birds, mammals and reptiles, collected and skilfully mounted by his own hands, and mostly from within a short distance of his home, forms one of the most complete and interesting local collections I have ever seen.

One is surprised and gratified to see so many species of birds here, only a little over a hundred miles north of the Delaware Valley zone, that do not occur in Chester county during the breeding season. And when one has spent a day in the mountains with Mr. Simpson he begins to realize how it is that he finds so many good things, and how he seems to know just when and where any given bird or animal may be looked for successfully. Just as ready to climb a hundred-foot pine as to scale a five-hundred-foot mountain, the fellow that follows his pace at the end of a week begins to wonder where he can find a new pair of legs.

During our week in Warren county, we listed seventy-two species of birds, forty-two of which we found nesting, and of the seventy-two, twenty-eight species do not nest in Chester county.

Some Birds of a Maurice River Farm

BY CHRESWELL J. HUNT

On the afternoon of June 6th we left Millville, N. J., on board the *Duma*, a forty-foot cabin-launch, and ran nine miles down the river to Buckshutem, where the owner of the boat has a little hundred-acre farm. It was my first trip on the Maurice river below the Millville dam, and I was surprised at the marked difference in both the character of the stream and the country bordering it, the crookedness of the river and the amber color of its water being the only things that the river below the big dam holds in common with the river above Union Lake.

Now the pine-barren country had disappeared, and the river was bordered by high sand-banks or wriggled its snake-like course through stretches of tide-marsh. I have never traveled a more crooked stream. We were always it seemed retracing our course.

The twenty-eight-foot dam-breast at Millville also marks a distinct change in the bird-life. The little trill of the Pine Warbler, so common about Union Lake, was no longer heard. Its place was now filled by the gurgling song of the Long-billed Marsh Wrens, while great numbers of Bank and Tree Swallows skimmed over the river. Fish Hawks were fairly common, and several of their huge nests could be seen in the tops of dead trees. Spotted Sandpipers were abundant, King-birds much in evidence and a Turkey Buzzard always in sight. The trip to Buckshutem was not conducive of a large list of birds, for as the *Duma* drew three feet of water it was necessary to keep well to the channel; also, two eight-horsepower gasoline engines going full tilt make sufficient music to render indistinct the bird songs that might be heard from the shore.

On reaching Buckshutem the *Duma* was headed into a sort

of little inlet, where the farm came down to the river. This little natural harbor proved an ideal retreat, for when within the river with its passing boats was entirely hidden by a thick fringe of trees and alder bushes, from which Yellowthroats, White-eyed Vireos and Red-winged Blackbirds scolded at our approach, while in the other direction stretched a grassy meadow.

As the *Duma* nosed her way up to the bank and came to a stop, my attention was at once attracted to this green meadow, for my ear caught a familiar little bird note—a song that once heard is not likely to be forgotten. Almost a year had passed since I last heard it, and I was glad to renew my acquaintance with Henslow's Sparrow. The little meadow seemed full of them. At least a half-dozen birds were in song at the time. It was almost sundown, and a host of birds were singing—Orchard and Baltimore Orioles, Robins and Brown Thrashers—but as I recall that evening aboard the *Duma*, it is the little two-syllabled song of the Henslow that made the deepest impression on my memory. The song is usually described in the books as “che-tick.” Mr. Rhoads (CASSINIA, 1902) has likened it to “amen,” while Mr. Pennock (CASSINIA, 1907) thinks “switch-em” more nearly fills the bill. To my ear none of these words give a correct idea of the song, except as they convey a two-syllabled utterance. Indeed I think them rather misleading, for to me “che-tick,” “amen” and “switch-em” imply that the accent should be upon the first syllable, while the *second* syllable should be the stronger of the two. I believe Mr. Ernest W. Vickers (*Wilson Bulletin*, Sept., 1908) comes nearer the real thing when he describes this song as resembling “tis-zeek,” the accent upon the “zeek.” When singing the bird throws the head back with a jerk and seems to fairly fling out the song. It is claimed the bird also has a longer song, more like the song of the Yellow-winged Sparrow, but I have never been fortunate enough to hear other than this little two-syllabled one.

The night was spent aboard the *Duma*, for one of my friends is somewhat of a bird enthusiast, and we were to be astir before sunrise to hear the morning chorus. So when the mosquitos

became unbearable upon deck we retreated to the cabin, which was rigged mosquito-proof, and climbed into our bunks, while outside the Night-hawks skimmed about and the Whip-poor-wills still sang. In that evening chorus there had been one bird-song missing—there were no Wood Thrushes. I had never before failed to find them in such a locality. They are found about Union Lake, but below Millville they were absent.

The following morning (June 7th) we were greeted with the usual bird chorus enjoyed by early risers in similar localities about Philadelphia, with three marked differences, no Wood Thrush, no Swamp Sparrow (similar marshes along the Delaware would be full of them), and the whistle of the Bobwhite played a major part in it. I have never seen so many Bobwhites in so small an area, but I later found that they were not so plenty on the adjoining farms, which was no doubt due to my host's strict game laws. All day of June 7th was spent upon the farm, with the exception of a short walk to Buckshutem Pond, in the hopes of finding a Wood Thrush there; but although I would consider it an ideal Wood Thrush country none were found. I have never seen so much with so little effort as I did that June day on that little hundred-acre farm. Birds were everywhere, and surprises in wait at every turn. The ground here is low, the highest spot on the place being scarcely twenty feet above sea level. They never suffer drought. Indeed, it is necessary to have the fields ditched to carry off the excess water supply. Song and Field Sparrows were found everywhere; Vesper Sparrows were common about the cultivated fields; Chipping Sparrows haunted the orchard and shade trees about the house; Yellow-winged Sparrows were found in a grassy field just over the line on an adjoining farm, and Henslow's Sparrows abounded in the low meadow land near the river.

One of the features that contributed toward the making of this red-letter day was the finding of a nest of the Henslow Sparrow. Of course I had more or less hopes of finding a nest, but when I recalled the unsuccessful expeditions of D. V. O. C. members on a like quest, it seemed almost like wishing for the moon. So it was with little hope of actually finding a nest that I started across a field where several Henslows were singing. I had got-

ten to about the center of the field and was trying to locate one of the singers when a bird shot up almost from under my feet. I marked the spot and followed up the bird to identify it beyond all doubt, although I was so close when it took wing that I could see distinctly the reddish back and greenish head. Close observation with the field-glass proved it to be a Henslow, so I retraced my steps to the spot from whence it had taken wing, and to my delight there was the nest and five eggs. The nest (now in my collection) was placed upon the ground among the thick grass which was *not* arched above it.

I was told about a nest, containing three eggs, that a bird had built in the strawberry patch and had deserted, probably on account of its being so near the lane where the wagon was frequently passing. It proved to be a Spotted Sandpiper's nest, and was scarcely more than a hollow in the ground, lined with next to nothing, placed among the strawberry vines. Later in the day, while passing the strawberry-patch, I flushed a Spotted Sandpiper from a nest and four eggs. This nest was similarly placed in a strawberry row, and only about twenty yards from the abandoned nest. When I flushed the bird from the nest she flew out across the strawberry rows with tail spread and the feathers on the head raised in a pronounced crest.

The note of the Red-headed Woodpecker was a characteristic sound, and Downy Woodpeckers and Flickers were much in evidence.

A Tree Swallow had a nest in the trunk of an old apple tree, and Black and White Warblers came to the shade trees near the house.

One Little Green Heron, one Hummingbird, a pair of Tufted Titmice, and a family of Carolina Chickadees were found.

A trip to the scrub-oak woods on the back of the place added the Chewink and Ovenbird to the list; Cardinals, Indigobirds, Chats and Yellow Warblers frequented the alder thickets; the orchard harbored Bluebirds, House Wrens and Crested Flycatchers; Phoebes and Kingbirds ornamented numerous fence posts; Wood Pewees and Red-eyed Vireos sang from the shade trees; Barn Swallows circled over the fields; the sky seemed filled with Swifts and Martins, and Goldfinches dipped here

and there, while tuneful Meadowlarks and harsh-mouthed Grackles voiced their sentiments.

The Bobwhites were everywhere. They were always exploding from under my very feet, and in a dry spot under a row of trees near the Henslow's meadow they had dusted themselves so persistently that the ground looked much like some sunny corner in a well-filled chicken yard.

Two weeks previously I had found the Hooded Warbler at home in Cape May County, and had heard its song for the first time, so when I heard a somewhat similar song coming from a small patch of wet woods, I went over expecting to add this bird to the list, but instead I found a male Redstart. A late migrant no doubt, but when on August 7th I found a male Redstart near the Maurice River near Porchtown, I began to wonder if the bird could have spent the summer hereabouts. Most likely this was an early fall migrant. Be this as it may, one might count on seeing Redstarts in this country during four months out of the twelve : May, June, August, September.

Down near the barn was an alder thicket surrounding a spring. While passing this spot I heard an entirely new bird-note. I found it to be made by a Sparrow of some sort, but continued observation failed to enlighten me as to the identity of the species. There were two of them. They would divide their time between the alder bushes, a young apple tree near by and a pile of fence rails near the barn. I must have spent several hours that day watching these birds, for after each of my many foraging expeditions to the different parts of the farm I would return and make another try at identifying this unknown Sparrow. I jotted in my note-book all the markings—I had never before made such elaborate field-notes on plumage—then I went down to the boat, where I had a couple of handbooks, and wasted an hour in trying to make my notes fit the book's description, but it was difficult work with extremely unsatisfactory results. The only thing that would at all fill the bill was the Savanna Sparrow. In fact, the book's description of the Savanna's habits fitted these birds admirably. I could not believe them to be Savannas, but the more I studied the book and the more I watched the birds the more Savanna-like they be-

came. I had now come to that point when Bird Lore's motto that "A bird in the bush is worth two in the hand" seemed decidedly untrue. One of those birds would be worth twice as much in my hand as were the two of them chirping in that alder bush!

On one of my returns to the house I was asked for about the twentieth time if I had identified the bird. When I stated that I had not, and that after the time I had spent in the endeavor, if I had a gun I would feel entirely justified in collecting one of the birds, to my surprise my host handed me a repeating shotgun and a couple of shells and told me to go and get one of them. Well, I must admit I did not need much coaxing, and a few minutes later there was a loud report down by the barn and I walked back to the house with the coveted specimen. The Sparrow proved to be an immature bird. The skin was given to Mr. Stone, who pronounced it a young Song Sparrow.

I am glad I collected the bird. All of my uneasiness over committing the murder has disappeared, for the gun had revealed to me a new chapter in the life history of the Song Sparrow. I have seen many young Song Sparrows, but apparently I had never before observed them at the age when, like the young man of twenty-one who starts out into the world, they had become of age and entirely broken the home ties.

Catoxen Cabin on the Rancocas

BY GEORGE SPENCER MORRIS

All things must have a beginning as well as an ending, and our camp on the Rancocas commenced in the writer's parlor one Sunday afternoon about ten years ago. We were sitting before the open wood-fire talking of old times. There were two of us, the one a sportsman much interested in birds, the other an ornithologist much interested in sport. We were reminiscing, and our good wives would be the first to forgive their much blessed husbands for the little note of longing that crept into our conversation as we dwelt on days gone by when guns and canoes, frying-pans and fishing tackle claimed our attention rather than servants' wages and the sizes of babies' shoes. Presently the long-legged sportsman broached the thought that perhaps even staid married men like ourselves might keep a little in touch with old woods life if we went about it in the right way. The idea found a ready resting place in the mind of the short-legged ornithologist, and then and there was conceived the plan of erecting a small house, shack or shanty somewhere in "God's great out-of-doors." We had not the faintest idea of the best location for this air castle, but we were not unduly ambitious; we sought no sportsman's paradise. We just wanted a bit of woodland—pines preferred—well away from the city; a stream that would float a canoe and perhaps furnish a few fish; a country not thickly settled, where we could cut our own firewood without criticism and once more enjoy the sweet incense of frying bacon wafted upward through overhanging boughs; where in the autumn we might be able now and then to knock over a quail or a rabbit. In the spring we just wanted to watch the flowers grow and hear the birds sing; and then, too, a fellow could sometimes take his wife and children. This generous thought naturally arose to soothe the stirrings of the domestic conscience.

The next move was made in the dining-room of a well-known club, where the table was spread for three. The men of the



PHOTO. BY H. S. NEWELL.



PHOTO. BY W. STONE.

CATOXEN CABIN.

fireside conference had taken unto themselves another, a smiling blonde-haired individual whose name is known to all students of American ornithology. Later they added two more to their number, one a cheerful fellow, who while he loves the bird in the bush, cares still more for the bush containing the bird, for it is among the botanists that we must look to find his name emblazoned; the other a man of learning, an instructor in one of America's greatest universities, a close student of birds, with a keen love for out-door life.

The diners separated after having come to certain definite conclusions. All were enthusiastically interested in the scheme. They at once planned a campaign of search for a possible location. They were agreed in thinking that the spot should not be more than twenty miles from Philadelphia, and that a return ticket should not cost more than one dollar.

Investigations to the north, south and west on the Pennsylvania side of the Delaware revealed no satisfactory location. At a later gathering some one boldly "took the bull by the horns," and said, "Well, I suppose there is nothing for it but Jersey." For the benefit of readers residing far from the benign influences of the Delaware valley, let me state that it is customary for Pennsylvanians in general, and Philadelphians in particular, to speak in a haughty, and even contumelious manner when referring to our sister State. There is nothing to justify it; it's just a time-honored custom, with no real malice back of it. Having thus asserted our superiority, we straightway betake ourselves for the months of summer to the shining sands and surf of Jersey's health-giving coasts, where for a long series of weeks the busy natives devote themselves to the pleasant task of separating us from our hard-earned cash.

But between the sea and the river lie sixty miles of sandy soil, well watered by streams that flow with a dark, strong current. There are the highly cultivated sections, which extend across the northern half of the State and down the eastern shore of the Delaware, and then there is the great central wilderness, stretching southward from the middle of the State and reaching at most points to the coast. It is a region of pine and oak and cedar, lonely and level, where the deer is still to be found and

small game abounds ; where you may wander far without meeting with signs of man, save perhaps the charred relics of deserted charcoal camps. You may take a likely-looking trail into this lonely region, sure that it must lead to some point of interest, but it rarely does. It just ramifies and fades away, and one is fortunate if there is enough of its thread left to make possible the retracing of his steps. Over this lonely land the broad, brooding wings of the Turkey Vulture are constantly spread ; its dark swamps are bright with *Cypripedium* and White Orchids ; in the spring its dry, sandy stretches are fragrant with trailing *arbutus* ; the little sundews lift their heads in the moist places ; millions of cranberries gleam in the brown bogs in autumn. In the winter it is a country of beautiful color ; rich russets and reds give contrast to the dark greens and purples of pine and cedar.

Here in the warm shelter of seed-bearing thickets thousands of birds find food and protection during the winter. The light, sandy soil does not hold the frost. The proximity to the sea has a distinctly moderating effect upon the temperature. You come upon birds and plants and even insects and reptiles which you had not expected to find so far north. In short it seems as though a bit of the Carolinas had been transported thither. In summer the marshes dry up to some extent and the land becomes gray, parched and dusty. Forest fires burn here and there, and by autumn the dry and sandy regions look withered and wasted.

A mild March day found three of the would-be campers wandering on the edge of this mysterious country. The old town of Medford was not far distant ; the deep, dark waters of the south branch of the Rancocas Creek flowed beside them. In the distance the purple pines formed a frieze along the skyline, hemming in the desolate regions beyond. We had come to the eastern edge of the farming country. A mile further and we would enter the Bear Swamp region, and then one might wander across some forty miles of almost uninhabited wilderness before reaching the coast. To us it seemed an enchanted land lying out there in the soft spring sunshine, and it called us with alluring voice. We determined to settle, if possible, within sight of its borders.

A thin strip of woodland fringed both banks of the Rancocas where we were wandering. The growth was about equally divided between pine and deciduous trees. Presently we came to a grove of taller pine crowning a little knoll which rose somewhat steeply from the bottoms bordering the stream. At the foot of the knoll bubbled a clear strong spring. A more ideal camp sight could hardly be imagined. But what would the owner of the land say to the coming of strangers upon his broad acres? As though in answer to an unspoken prayer there straightway appeared before us a tall son of the soil who looked us over with a keen but kindly glance. He was a man well on in years, full of a native dignity, and a sort of strong gentleness. We told him our story, and somewhat to our surprise he seemed to understand. The result was that then and there arrangements were made for the erection of our cabin beneath the whispering pines. I will not dwell upon our building struggles: suffice it to say that one of the members who posed as an architect draughted plans. There were heated arguments as to the most economical methods of cutting lumber, and it looked at one time as though blood might be shed in connection with the erection of the fireplace and flue.

But at length there came a lovely day in May, when for the first time we gathered under our newly-erected roof-tree, and taking our lives in our hands boldly plunged into the dangers of amateur cookery. Looking back over the past decade with an eye to our efforts along this line, one is impressed with the fact that man is a creature hard to kill. That first meal ended, we gathered about our broad fireplace and smoked the pipe of peace. Our labors were over, our dream had found fulfilment. Outside the moonlight sifted down through the pines and the wind whispered softly. We were far from the sounds of man. Only the occasional barking of the farmer's dog in the distance seemed to unite us with the outer world. There were the wild cries of the seemingly sleepless Killdeers over in the pasture, and every now and then an Ovenbird or a Catbird would break into song, stirred by the spirit of spring and the bright moonlight.

Since that day we have come to know the place in intimate

fashion at all seasons of the year. We have penetrated the lonely regions to the eastward almost to the coast. The waters between us and the Delaware have been navigated by canoe. We have tracked the small beasts of the woods in the snows of winter. We have watched the Shore Larks and Pipits sweeping over the bare fields like leaves in the gale. We have become intimate with the swamp-dwelling birds which grow fat in the winter on the seeds and berries of sheltered thickets. In the spring we have heard the first flute-like notes of the Bluebirds traveling northward across the sky, and have welcomed the gay throngs that follow until all our grooves and thickets are filled with fluttering wings and rollicking songs. We have watched the building of nests and the rearing of young as spring and summer progressed, and then when autumn has made all the woods and thickets to swim in a riot of color, we have seen the Wild Ducks come driving down the curves of the stream, and realized that soon the snowflakes would fly again.

Moreover, there has been a delightful human interest about this little cabin. Jolly family parties, when the flutter of skirts and the laughter of children enlivened the woods; wild, marauding bands of ornithologists and botanists who swarmed up trees and plunged into swamps in search of prey; dreamy-eyed artists with palate and canvas; tired business men who just wanted to lie on their backs and look up at the pines through half-shut eyes; and then there are the snug evenings spent before our glowing fireside when the winter wind whistles about the house and the good tale is told and the hot argument fought out. Yes, our venture has been a success, and has helped not only ourselves but others also, we trust.

All this has been written in the hope of stimulating a desire for such a life on the part of the readers of *CASSINIA*. We all know something of "the call of the wild," but whatever our inclinations may be there are few of us who can respond to it, save perhaps at very rare intervals. There is, however, a modified summons, which we might term "the call of the half wild," and to this we can more easily respond. Dame Nature is always loitering just round the corner. It pays to follow her beckoning; you can find no better company.



PHOTO. BY W. L. BAILY.



PHOTO. BY J. S. WITMER, JR.

INTERIOR OF CABIN AND RANCOCAS CREEK.

Bird-Life at Catoxen

BY WITMER STONE

The bird-life immediately about our cabin is not materially different from that of any rich woodland in the lower Delaware Valley, but from the fact that when we are there we live right with the birds instead of visiting them casually in their woodland retreat, they always seem much more abundant and much tamer.

The Wood Thrush and Ovenbird are perhaps the most characteristic species, and the woods fairly ring with their music during May and June. To one who is sleeping in a bunk close under the eaves the song of the Wood Thrush, which perches on the corner of the roof just outside, is almost ear-splitting. I never realized before what a volume of sound the bird produced, and when joined with the crescendo of the Ovenbird, as he walks over our front porch, any serious thought of early morning sleep, even should we be so inclined, is out of the question. Of other birds which come close to the cabin, there is the Phoebe, which often nests under the porch roof, the Humming-bird and Acadian Flycatcher, which have built their dainty nests over the path leading down to our spring. The Crows one year built in one of the tall pines which shelter us, and last season the Cardinals built in a little thicket of black birches within twenty-five feet of the back door. Maryland Yellowthroats, Chats, Tanagers, Black and White Warblers, Catbirds, Carolina Wrens, Downy Woodpeckers, Tufted Tits, Crested Flycatchers and Red-eyed Vireos are common nesting species in the woods, while all along the stream the White-eyed Vireos and Yellow Warblers abound and an occasional Green Heron or Kingfisher may be seen. Blue Jays and Carolina Chickadees are present at all seasons, but are most charac-

teristic in winter, when their cries replace those of the Wood Thrush and Ovenbird and become the music of our woods. Occasionally we see a few Pine Warblers, but whether they breed here or are merely stragglers from the wilderness to the east has not been determined.

In the old fields lying between our woods and the station, and also just east of us, quite a different avifauna prevails. Meadowlarks abound, their calls are ever in the air, and in early spring we have sometimes seen the rival males fighting on the ground like game chickens, striking and clutching one another with their powerful claws. Killdeers, too, are always to be seen, and in muddy places we find the borings of Snipe early in the season. In similar places, too, are the Redwinged Blackbirds with their nests hidden in the thick clover, and once we found a Robin's nest in a similar position in the very center of a large field with no tree near. In the drier ground are Field Sparrows, Vespers, and a few Grasshopper Sparrows, while the borderland between the wood and the open harbors Thrashers, Song Sparrows, and Indigobirds.

About the old farmhouses other familiar species greet us when we tramp across country for supplies just before dark. House Wrens are still common birds in this neighborhood, and Flickers, Purple Grackles, Orchard Orioles, Kingbirds, Wood Pewees, Chipping Sparrows, Warbling Vireos, Robins, and Bluebirds are to be found about every orchard, while Barn and Cliff Swallows and Chimney Swifts circle about overhead, and far above is the ever-present Turkey Vulture.

When we take an all-day tramp over to the Bear Swamp, or farther into the wilderness, we find still another group of birds. Ovenbirds, Maryland Yellowthroats, and Field Sparrows still abound, but the Chewink becomes the characteristic species, with Pine and Prairie Warblers, and in damp places surrounding some old deserted forge or saw-mill we find an abundance of Whip-poor-wills, Tree Swallows, and Martins, together with some Parulas and Hooded Warblers.

On the cranberry bog in the Bear Swamp, and also at Chairville on the western edge of the pine barrens, we have found that interesting little bird, Henslow's Sparrow, which until re-

cent years seems to have been overlooked by our local ornithologists.

The above species, with an occasional Goldfinch, Cowbird, Cedarbird, Baltimore Oriole, Night Hawk, Yellowbilled Cuckoo, Screech Owl, and Sparrow Hawk, make up the normal list of summer birds for the region covered by our usual wanderings when lodged at Catoxen.

In migrations there are, of course, many other species. The various Warblers pass through our woods in their travels, and ducks—Wood Ducks, Mallards and Black Ducks—have been seen on the creek, and down by the spring early one May morning I heard a Veery singing. Late in August, too, we usually see solitary Migrant Shrikes perched on the fence posts about the old fields and flying away to the top of some small tree, with much show of white on the wings, as we approach.

In winter the Juncos come up to our door for crumbs, and Brown Creepers, Nuthatches of both kinds, Golden-crowned Kinglets, and occasional Myrtle Warblers are to be seen, while swamps and thickets shelter Tree and White-throated Sparrows and an occasional Hermit Thrush.

Goldfinches, Cardinals and Jays are more conspicuous at this season also, and several times we have watched the Pine Siskins feeding on the alder catkins. A little to the west, as the winter sun is setting, we can see the long lines of Crows patiently winging their way to the Merchantville roost.

One bitter cold windy day an enthusiastic ornithologist discovered a Snowy Owl perched in the dense top of one of the tall, slender, red cedars that line the old fence rows. After a vigorous bombardment, a well-directed missile brought the bird to a realization of its danger, and with tremendous wing action and loud complaining cackle there flew out of the sheltering cedar and away over the fields to a solitary farm-house a snow-white Guinea Fowl, demonstrating that color and size are not always sufficiently diagnostic to be relied upon.

Among the birds which do not occur at Catoxen, so far as we have been able to ascertain, are the Swamp Sparrow and Marsh Wren of the Delaware meadows which apparently do not here venture above tide-water, the Redheaded Woodpecker, always a

rare bird on the New Jersey side of the river, and the Worm-eating, Kentucky and Blue-winged Warblers* common species in the low woods of eastern Pennsylvania.

We have not collected birds at Catoxen ; in fact collecting, so far as we are concerned, is tabooed. Neither have we made especial effort to record rarities, our attention has rather been directed to a better acquaintance with the commoner every-day birds that surround us than to the casual transients that look in upon us for a moment without any intention of stopping and making their home at Catoxen Cabin.

* This species has been seen on the edge of Bear Swamp, May 30, 1906, and along the Rancocas to the north.

Three Finds in South Jersey

BY ROBERT THOMAS MOORE

Red-letter days are not so common to bird lovers as one might infer from devouring the purple accounts of camping and cruising ornithologists. With colony bird life the ordinary bird lover has little to do. The populous islands and overcrowding nests gleam and remain in the imagination, and are at best but witching potentialities never actualized. If he would contribute valuably to the store of bird knowledge he must sacrifice his gleaming visions on the altar of thorough study of the commonplace. Occasionally, however, very occasionally, his study trips are starred by finds; he secures a rare bird or chances upon nests unlisted before. And however much he has been schooled by professional ornithologists to belittle his feelings, he cannot help the heart-stopping thrill or altogether check the frenzied shout.

With the expectation of such a thrill I planned a trip to Southern New Jersey. The Pine Warbler and Blue-gray Gnatcatcher were immediate causes and attracting forces. The former, though reported resident, has never had its nest recorded from the State, and the latter both in person and home is exceedingly rare. How often the clear monotone of the one or the flitting blue form of the other had beckoned down the winter months. At last May 13, 1908, arrived, and we started, my brother and I, for Griscom Swamp. To reach it required fifty-three miles of automobiling, by no means objectionable on a balmy May morning. The rising sun had waked us and ushered in the hottest day of the month, but the humidity was not excessive, and an early start had sent us half our distance before the sun had mustered all his forces.

The trip was not all whirling monotony as long automobile rides are apt to become. In the morning dusk rabbits darted

in front of us or speeding directly ahead, risked instant death. Whip-poor-wills rose in lumbering flight almost too slow to escape the radiator, or crouching permitted us to pass over them. Near Elwood a racoon underestimated our speed and nearly lost his tail thereby. And at Estillville two quail thundered up from the road. But the most interesting incident occurred three miles from Egg Harbor. Two adjoining telephone poles were inhabited. From one we shocked into startled flight a Flicker and from the other a Bluebird. As the nest holes were at the same height, and resembled each other in general appearance, except that the Bluebird's was more weather-soiled, we assumed that the Flicker had excavated both, one in 1907 and the other in 1908, being compelled to hollow the second by the Bluebird's preëmption of the first. The last part of our trip twisted and turned over rollicking hills to a farm-house on the borders of Griscom Swamp.

Plans having been settled and a friend secured as guide, after an hour's delay, we were winding over a wretched road toward the center of Griscom. Part of the way was sand, much of it mud, and the rest corduroy. It was so dangerously narrow, and set us hitching and tossing so distractingly, we could hardly appreciate the stretches of pines, the gloom of cedar swamps, or the flashing sunlight of bayberry openings. The two miles were not covered at a speed to excite the greed even of a South Jersey justice. What with butting the sand and bumping the logs we made slow work of it, and vigorously prepared our digestive systems for lunch. Nor did that meal beckon alluringly ahead when every glance to the rear focussed a horde of mosquitoes augmenting in fierce pursuit. At last we jolted into the open space about Griscom Mill, and at once lunched in pestered ease.

We were now in the middle of Griscom Swamp. For nearly a mile we had labored across its western arm and had reached a small clearing perhaps an acre in extent, somewhat elevated and therefore dry. Before us to the east lay the main swamp. Across it one mile would bring us to the Great Egg Harbor Meadows. North or south we could travel either way two and a half miles without emerging. A wilder place is not to be

found in South Jersey, nor one in which the feeling of separateness from the ways of man can be so complete. Five miles long and from one to two miles wide, this great area is a borderland, half wet and half dry, between the maritime meadows and the pine barrens of the mainland. It has a uniform appearance, except where slightly different floras and faunas are produced by abundance or scarcity of water. Waist-high it rises in the depths of the swamp, while on the edges, or on the so-called islands, it supplies only enough to saturate the earth to a spongy condition. Innumerable streams twist and bisect each other, forming a network of waterways and flowing so sluggishly as to make it hardly correct to say they drain the swamp. In fact, water actually "backs-up" from the meadows during storms and unusual periods of high tide.

As we took the main swamp road eastward we passed for a half mile over a more or less dry portion. Here the characteristic and most abundant trees are pines, scrub-oaks and holly. These mass or cluster, and among them are scattered beeches, pin oaks, small birches, and maples. The most characteristic feature here, as well as throughout the whole swamp, is the impenetrable quality of its undergrowth. A prickly and close-set foundation of holly, sassafras, sweet gum, huckleberry, hardhack, and swamp maple is bound and knotted inextricably by briers and the vines of smilax. The slightest detour from the road means a plunge into thorns, and no one gets through without blood-letting. The strongest gunning trousers will not escape notice, and buckskin gloves are repeatedly pierced. However tempting the prize, no one enters without counting the chances. And of one, alone and lost without a compass, it may be truly said, "who enters here, leaves hope behind."

Keeping carefully to the road therefore, our guide led us on, hoping that along the opposite side of the swamp on the points that jut into the meadows we might find something rare. Our first thrill was as unexpected and surprising as one could wish, for we were proceeding rapidly, and what with clinking climbers and irrepressible voices making more noise than we should. A sluggish wind served but to intensify the heat and permitted the mosquitoes to plan their attack with care. Each of the

grassy swales that at intervals widened our path increased the gray-legged host. Their terrors were unmitigated by the pine fragrance which hung heavily about us and rendered our infested course tantalizing. Insect liquids were of no avail, for they were instantly floated off by perspiration. I tried to listen to new notes, and especially for the Pine Warbler's monotone, which I had often suspected among bird medleys, but never identified. Birds were singing in confusing numbers. Sparrows chirped, Woodpeckers shrilled alarm or interest, the Prairie Warbler ran his chromatic scale, and the Wood Thrush rang the minor on his flute, but no new voices. A short distance from the meadows we took a branch road to the north and plunged into the wetter portion of the swamp. Off from the road were innumerable pools from two to three feet deep, and in places the road itself dipped under a foot of water. The pines thinned out to straggling sentinels, and their places were taken by gums.

Passing the last clump of pines some intuition common to bird seekers swung my glance directly back over the road we had come. From the umbrage of a pine tree peered a small bird of yellowish tint, watching quietly; there was something so tense about her posture that my suspicion was awaked. Nothing but the proximity of a nesting site could cramp a bird into such an attitude. A moment of bird fear was on it. I leveled my powerful Goertz glasses. Sure enough! In the bill was a bit of fluffy material, and, joy of joys, it was a Pine Warbler! The little experience I had had with this species enabled me to identify it as the female. I hissed to my companions for silence. However intense the bird's fear, her statue mood soon passed. With sluggish flight she flew to the top of a pine not twenty feet from where I stood, and actually overhanging the road along which we had come. So thick were the pine spills, she entirely disappeared, and before I could aim my glasses had slipped out again and skulked into the swamp. I examined the tree's top. Nothing but bunches of long spills and pine cones! That barrenness spoke of failure, and recalled Mr. Stone's words regarding trips in search of this species: "We saw plenty of birds, and strained our necks in vain for the

nests." Again I raised my glasses, and cramped myself in neck-tiring positions, but to no purpose. There were only ten small limbs on that tree, and every spill and cone magnified distinctly through my lenses. Disappointed I decided to wait. Not three minutes passed before the bird appeared again with more material, and waiting a second of caution, fluttered to the same side of the same pine's top. Again she was too quick for me to catch her at work, but not quick enough to conceal the spot. Apparently it was a big pine cone saddled on one of the highest limbs. Was it a cone? The long pine spills almost hid it. I determined to hold my glasses continually on that spot till the bird arrived again or my neck broke. One minute, two, five minutes passed. I was beginning to regret my determination, when a sharp warning from Joe made me alert. The bird had come into the field of my glass and was weaving cotton around that pine cone. No words could describe the surge of delight within me as I realized that a Pine Warbler's nest had at last been found in New Jersey,* and I was the lucky discoverer. Triumphant I turned to my companions and announced the discovery. I was in the throes of the first thrill, and they kindly bore with me in patience while I dilated on the value of the find. It required consummate forbearance not to climb that tree and make assurance positive. But I took the way of caution and decided to return a week later.

With backward glances we proceeded deeper into the swamp. Of the large trees, none but gums, beeches and hollies remained. While the varieties of trees decreased, birds became more numerous. But we had little time to investigate, as we wished to push on to the meadows. I discovered in passing a Hooded Warbler's nest half finished, and caught sight of what I would positively state to be a Gnatcatcher had I ever had the precedent of seeing one before. Many gums were of tremendous size, gaping here and there with promising Owl

* While I know of no published records of the finding of Pine Warblers' nests in New Jersey, I have just been informed by Mr. J. P. Callender that one was discovered with eggs near Chatsworth in the Pine Barrens May 28, 1904, by Mr. H. H. Hann, and another with young at the same place June 1, 1904.

—ED.

holes. A quarter of a mile beyond the Pine Warbler's nest we decided to risk a plunge into the swamp and cut due east for the meadows. Wading through water, bisecting bunches of brush and diving into briar nets, gave us serious thought for half an hour. At length we caught sight of the dead stumps and twisted trees that mark the fighting line between the swamp and the meadow storms. This was a favorite home of woodpeckers; every stump was drilled, and habitations were neighborly enough to be described in terms of colony life. Stepping out from the swamp, the meadows seemed dry in comparison. Here the light south wind had full sweep, and kindly parted us from our winged pests. East, north and south stretched the salt marshes apparently without life and almost unbounded. Only at ten miles distance was the eastern horizon ridged by blue, marking the line of coast islands, else would the meadows have dwindled away in heat vapors and atmospheric scintillations. Before us lay the scene of one of nature's everlasting battles, always in subtle progress. Directly north and south like a shattered saw edge stretched the margin of the swamp. Its line swung irregularly, here jutting out triangular points, there projecting rounded knobs. Dead stumps singly in the meadow denoted victory for salt and wind, while clumps of trees on meadow islands spoke of sturdy fighters still in the battle.

Towards one of these points my brother and I started, while Joe, our guide, kept to the swamp. A quarter of a mile over spongy and muddy creeks brought us to our goal. As we approached the point Fish Crows took wing and beat or sailed above in cawing protest. Their attachment to the place did not seem strong, as they soon disappeared, flapping heavily over a miniature marsh to the swamp. This marsh formed the base and the pine end, the point of an irregular triangle that protruded encroachment onto the meadows. Entirely enclosed by trees, it is about one hundred feet long by three hundred feet wide, counting the width as distance across the base of the triangle. Over the entire space four feet in height waved a growth of wild rice. It grew in bunches on little mud islands, the water between being from one to three feet deep. The point

of the triangle out beyond the marsh was, except for several sloughs, comparatively dry. Covering it sparsely were dead and dying trees in shapes of sturdy defiance or cringing impotence. Twisted and contorted by ravaging storms, they stand gray sentinels at the post of duty. In life gaunt fighters; in death they were petrified symbols of endurance past human. The dead were half the trees on the point, the living were mostly pines and oaks. Only one other large tree had chosen this dangerous outpost, the swamp maple, and only a few of these. The undergrowth was not nearly so thick as in the swamp. Briars were almost absent and huckleberry bushes were numerous. The thickets were completed by birches and gums. Bracken and pine spills covered the floor. Flung in all directions were fallen trees and dead logs.

Over these and through the undergrowth we pushed, flushing birds at every step. These were Sharp-tailed Sparrows, Yellowthroats, Hairy and Downy Woodpeckers, and Carolina Chickadees. Other species were not revealed by a hasty search, and one glance upwards discovered but a few Crows' nests bunching the tops of the pines. I gave up the end of the point and headed for the rice marsh. Gracefully it waved in shimmering greens to the unsteady breeze. Halting at the edge, I calculated the difference between the depth of the water and the height of my boots. As I stood there in dubious indecision, I was suddenly thrown into the second thrill of the afternoon. A large bird sprang from the marsh not fifty feet in front of me. An erupting geyser could not have made my heart hammer faster, for those poorly hidden islands of mud were the last places I would have thought could have concealed so large a bird. Save for one shrill cry it rose silently, and gaining power with each wing stroke swiftly made for the meadows. To disappear from view in soaring flight was a matter of seconds. From where I stood I could plainly see the bird's nest which occupied completely one clump of mud, and was but slightly screened by grass. Even at a distance of fifty feet the glint of blue eggs caught my eye, and their beckoning glamor broke my spell-bound posture.

I confess my movements were curiously like those of a bird dog on stand, changed by the hunter's shot into a frenzy of

unthinking action. Fortunately the water was not deep at this point, or I would have suffered for my thrill. Vigorous jumping and splashing brought me to the nest.

A mud island four feet square, covered with stalks of wild rice, had been appropriated by the birds. The center of the clump was occupied by the nest. The foundation of this, two and a half feet in diameter and six inches high, was composed of pine and oak twigs intermixed with bunches of pine spills and bracken. On top was a slight hollow eight inches in diameter, rounded roughly by half a dozen bunches of meadow hay and a few rushes. It was a bulky, roughly-made platform, yet possessed all requirements needed for a ground nest, security of position, height above high water, and ability to hold its clutch. Five beautiful eggs, light-blue as the softest sky, nestled in the hollow, and despite their size crowned the bulky mass with light and delicate beauty. They were uniform in color, without spots or blotches, except that two had faint light-brown streaks or smudges.

These objects in blue, for whose possession a skulking war between their owners and the meadow pirates was evidently in progress, were the center and soul of an island home. From the standpoint of bird art nothing more could have been desired. Completely surrounded by swaying grasses it reigned supreme as castle of a grassy lake. Water was not wanted for moat nor trees for demesne. The owner was king of the place and held all under fear. It was really as well chosen a bird retreat as I have seen. On the edge of the great meadows, yet well concealed by the screen of trees, it was a vantage point from which the Hawk could dart out over the marshes in search of food or perform aerial evolutions for the admiration of his mate.

And it was a Hawk. None but the Marsh Hawk could have owned such a nest or possessed such an appearance. Astonished as I was when it rose, I had noticed its owl-like ruff and fluffy feathers, and especially the white upper tail-coverts. To my startled eyes the bird had the appearance of a wedge, very wide in front and narrowing toward the tail. But I wanted more positive identification, because a book I had with me, "The Birds of E. Penna. and New Jersey," gave the last re-

corded nest from New Jersey as found in 1877. Two hours in ambush, part of which time I spent in search for Joe, who had been frenzied by the sight of a deer, failed to secure the bird. Both were seen for most of this time soaring over the meadows at high altitude, but only once did one come within gunshot. That descent was described by my brother as a most peculiar performance. Just preceeding it the bird, probably the female by its size, had been but a speck miles off in a cloud-flecked sky. Suddenly it changed its soaring motion and mounted spirally aloft. When almost out of sight, it poised for some seconds. Noticing that it was gradually growing larger, my brother became aware that the bird was coming directly for her nest. With such inconceivable rapidity were those miles of distance covered that almost before he could get ready to aim, the bird had reached the point, and was sweeping down a stump-bordered opening "like a feathered cannon-ball." Without pause or slacking it came straight on, and so confused him that he forgot to wait, and fired two shots at it when only twenty feet away. Of course it was a miss, and no amount of waiting thereafter secured another chance. Several times one of the birds did begin the same evolution, but lost courage at the point and sheered obliquely back. We decided to take the eggs for fear the Fish Crows hovering about might pounce upon them before the Hawks recovered from their timidity.

Nine days later, May 22d, with an entirely different party, I made another trip to Griscom Swamp. The day began with clouds and ended with heavy rain. Though not a hot day the humidity was terrific. We reached the Pine Point without other incident than going a mile beyond it. We entered at the same spot we had nine days before. Having reached the edge of the miniature marsh just where the Marsh Hawk had first startled me, I was in the act of pointing out the nest to my companions when a fluttering noise back of me whirled me about instanter. A Black Duck had jumped almost at my feet and was whirring at high velocity down the same line of dead stumps pursued by the Marsh Hawk. I was instantly alert to possibilities. Black Ducks were common enough, but not at this season, and a nest would be a rare find. Not for years had

its eggs been secured from New Jersey, and though reported as breeding from one or two localities, no definite egg-record had been made. It was therefore with eagerness yet care we began a search. Two minutes' time sufficed to make the discovery. There it nestled at the foot of a small maple so perfectly concealed that one could stand directly above it and glancing down could not detect one of the nine eggs. It was about sixty feet from the Marsh Hawk's nest, and not five from the stand I had taken when startled by the Hawk's first appearance. I remembered the tree and its lichens distinctly, and seemed to recall having leaned against it. I must on several occasions have passed within a foot of it. Where the Duck had been on the thirteenth when we had spent three hours in this locality was a problem. We must surely have noticed the bird it would seem flying about, at least at a distance.

I have read descriptions of the eggs calling them "dirty drab," which led me to expect a nestful of unattractiveness. Not such was the case with this particular clutch. Beauty they possessed at least when observed in their natural surroundings. The body of the nest filled the space between the roots of a large maple. Dark green lichens spotted the tree forming a beautiful background, while light green was the color of the huckleberry bushes branching above and grouping on the left. The front and right were screened by a bunch of soft brown grasses, which converged above with the huckleberry bushes and made it impossible to thrust in a hand without breaking the grasses. The nest proper concaved about a depression eight inches in diameter. It was filled with pine spills, bracken, and leaves of oak and maple, no down having yet been inserted. The eggs were packed closely, the leaves sticking up between them. In color they were cream buff, some of them having a slight greenish tinge. The whole interior of the nest was soft brown, leaves, spills, and eggs lending various shades, but all moulding into each other. These browns harmonized with the greens above, and made a most attractive home. Four days later the nest contained twelve eggs, so full as to have the appearance of convexity. Three eggs had been laid in four days. Down was now present, having been inserted in little bunches over the inside of the nest, adding a touch of warmth.

After leaving the Pine Point we went straight to the Pine Warbler's tree. With my glass I surveyed the supposed nest for several minutes. No sign of a bird was visible, but a knock on the tree brought the bird down, tumbling almost into my arms. Even for a bird mother it was a most peculiar artifice. Like a dropping plummet she fell straight to the earth, fluttering to a log a few yards distance from my feet. This log straddled a pool of water. On it she crouched, acting the broken wing in motion, a pathetic picture of trembling love boldly acting deception. At last, seeming to realize she could not draw me away, she walked lamely into the swamp, playing the game to the very last. Later she appeared on a neighboring pine, an actor no longer but a silent spectator of my movements. It is remarkable that during several hours spent about this nest I only once saw the male, and never heard a note from either bird.

Not till I had climbed the tree was I sure of the position of the nest. It was placed within a foot of the top about thirty feet from the ground, fourteen inches from the trunk, and saddled on a short branch. The tree was a pitch pine (*Pinus rigida*), seven inches in diameter at the base. For fifteen feet there was not a limb, and then only small ones, ten in all, giving the tree at its widest point a width of eight feet. Despite the absence of limbs there was an obvious reason why the nest was so difficult to detect. The cones on the tree were bunched near the top, and the nest was placed directly in their midst, not dissimilar from them in breadth at the bottom. A thick network of pine spills, five to six inches long, screened it below and above, forming a mass of umbrage impossible to pierce. This considered with the secretive movements and surprising artifices of the bird make it clear why the nest is so seldom discovered.

The materials of the nest might be described in the words of Mr. R. B. M'Laughlin in an article entitled "Nesting of the Pine Creeping Warbler": "The outer portion consists of long, thin strips of bark from grapevine, bits of dead weeds, and the stems of dry oak leaves, intermixed with a very fine silken web or cocoon which the bird gathers from openings in the pine bark;

web of the caterpillar is also used. It lines freely with feathers, using a respectable quantity of horsehair and dead tops of sedge also. The bottom consists mostly of feathers, and on the whole is quite warm and neatly built." My nest differs from this and from all other descriptions I have read in that there is not a feather used within or without. Instead, silky fuzz of the nature of thistledown has been employed, giving the interior the appearance of a Goldfinch's nest. It is securely perched on a cross formed by two small branchlets, which jut out at right angles to the main branch, and is held upright by pine spills woven into the sides. Three inches of depth inside provide further security for the contents when rocked by the strong shore winds. The eggs, four in number, are exquisitely marked with spots of brown and blotches of lilac and mauve. Though smaller and not quite so heavily spotted, they closely resemble a set of Vesper Sparrow's eggs I possess.

Mr. Ora Willis Knight, in the "Birds of Maine," states that the nests he has seen were "placed invariably in smallish pines at the edge of the taller pines and deep woods in an old clearing or opening on a side hill." This nest too was placed in an opening where a few pines divide the grasses from the swamp. The tree containing the nest stands alone, prominently apart from other large trees. A few feet south of it the grasses and goldenrods stop and impenetrable thickets begin. Such places have a charm of contrast, and one prefers to think that birds who "invariably" choose them possess some esthetic feeling. As I held the wheel that night whirling through fifty-three miles of darkness the day's incidents passed before me. Kaleidoscopic visions hurtled each other through my brain, of interminable swamps and pulling thickets, and especially of one tree on the border of swamp and grassland slanting obliquely upward into the sun.

A List of the Birds Observed on the Barnegat Region of the New Jersey Coast in August, 1908

BY WILLIAM C. BRAISLIN, M. D.

The rather meagre list of birds herewith presented contains a few species which seem to the writer to be of special interest. The short time which we were able to give to the trip is largely responsible for its brevity, as it could doubtless have been indefinitely extended had time allowed. The species listed occurred on or between August 22 and 25, 1908, unless otherwise stated, during which time the writer was the guest of Mr. Benj. T. Van Nostrand at Forked River, New Jersey.

Supplementary notes from his and Mr. John N. Drake's observations are likewise included; these instances being accompanied by their proper dates or definite data under the head of each species thus included. That part of the great autumnal migratory movement noted was so small that had it not been for the additions furnished by my friend referred to, the list would scarcely be worth recording.

Larus argentatus, Herring Gull. About a dozen birds of this species were noted during the days stated, most of them adult birds, nearly always singly.

Sterna hirundo, Common Tern. The abundance of these birds was very noticeable throughout our stay. Terns seemed to be visible at almost all times. The great number observed was in pleasant contrast with their scarcity at the same place and about the same date two years previously.

Hydrochelidon nigra surinamensis, Black Tern. Common. At this season the dark coloring serves to distinguish the species if the observer is fairly near at hand. The difference in size is not so appreciable when in flight as one might suppose. A wing-tipped bird of this species was picked up on the beach at Beach

Haven. It has retained some of the dark unmoulted feathers of the nuptial plumage on the head, especially above the base of the bill. About a hundred birds in straggling flocks were noted at this station within the hours between two and three on the afternoon of Aug. 23d, but not so abundantly at any other time. So far as we saw, none of the numerous Snipe shooters on the beach disturbed the Terns, and had not the wounded bird been found I should have believed them to have passed unmolested.

Puffinus borealis? Cory's Shearwater. Shearwaters, all supposed to be of this species, were observed off the beach over the ocean opposite Forked River in considerable numbers on Aug. 22d. They were migrating southward, mostly in small flocks, maintaining a rather low, steady flight by even, deliberate wing strokes. Their dark upper and white under parts, manner of flight, and a previous "scraping" acquaintance with the species, led me to a rather positive diagnosis, yet as we had no opportunity to take any, it is considered but proper to question the species. An easterly wind then blowing perhaps led them nearer than usual to the beach.

Florida cærulea, Little Blue Heron. Several White Herons were observed on Mr. Van Nostrand's salt meadows on various occasions during our stay, and all were believed to be of this species, though none were taken between the dates mentioned. Ten days before my arrival one from what he supposed the same flock had been secured by Mr. Van Nostrand at the same spot and sent to me. The individuals of this flock were extremely shy, and seemed to preserve their numbers successfully, though much hunted, as they were still reported as present well into the month of September. All the birds seen were in the white phase of immature plumage, no adult being observed.

Butorides virescens, Green Heron. Fairly common on the salt meadows.

Nycticorax nycticorax nævius, Black-crowned Night Heron. Not quite so common as the preceding.

Ardea herodias, Great Blue Heron. Ten to twenty seen in the four days. A bird of the year was secured by one of the party. These birds were reported as much more abundant here two weeks later.

Rallus elegans, King Rail. Several days subsequent to my departure Mr. Van Nostrand secured a fine example of the King Rail. It was on rather higher ground, nearer the upland, than a Clapper Rail taken on the same day, but nevertheless in the wet meadow. A number of little ditches, a foot or more deep, and bordered with the salt grass, seemed attractive to both species. The spot where the King Rail was taken was only a few yards from where the following was found.

Rallus crepitans, Clapper Rail, Common.

Macrorhamphus griseus, Dowitcher. These birds were not observed during my stay, but the following week, which was stormy, brought numbers of Snipe not noted before. Among them was this species :

Tringa maculata, Pectoral Sandpiper. The same remarks apply to this species.

Ereunetes pusillus, Semipalmated Sandpiper. Fairly common during the entire period of our stay.

Ereunetes occidentalis, Western Sandpiper. Four very typical examples of the Western Semipalmated Sandpiper were taken on Aug. 22d.

Calidris arenaria, Sanderling. The most abundant of the family observed. In the aggregate at least three hundred were seen feeding or in flight along the inner and outer beaches Aug. 22d to 25th.

Totanus melanoleucus, Greater Yellowlegs. Common one week after my departure. None seen during my stay.

Totanus flavipes, Yellowlegs. One flock of about twenty birds seen Aug. 22, one of which was secured.

Actitis macularia, Spotted Sandpiper. Common.

Numenius hudsonicus, Hudsonian Curlew. During stormy weather, Aug. 28, Mr. Drake secured one of two birds of this species which appeared in the salt meadows.

Squatarola squatarola, Black-bellied Plover. Not observed until Aug. 29, when five were seen.

Aegialitis semipalmata, Semipalmated Plover. A few seen each day.

Arenaria interpres, Turnstone. Three noted at beach opposite Forked River, Aug. 22; on Aug. 24 at Beach Haven thirty-two were seen.

The following list comprises such birds as were seen in the house-grounds and on the way to and from the dock and a few elsewhere:

- Colinus virginianus*, Bobwhite. Common.
- Cathartes aura*, Turkey Vulture. Four seen Aug. 21.
- Circus hudsonius*, Marsh Hawk. Two on Aug. 22.
- Megascops asio*, Screech Owl. Heard in evenings.
- Coccyzus americanus*, Yellow-billed Cuckoo. One seen Aug. 22.
- Dryobates villosus*, Hairy Woodpecker. Two or more Aug. 23.
- Colaptes auratus luteus*, Flicker. Common.
- Antrostomus vociferus*, Whip-poor-will. Heard at dusk.
- Chordeiles virginianus*, Nighthawk. Three seen before sun-down, Aug. 23.
- Chaetura pelagica*, Chimney Swift. Common.
- Trochilus colubris*, Hummingbird. Observed on two occasions.
- Tyrannus tyrannus*, Kingbird. Abundant.
- Sayornis phæbe*, Phæbe. Common.
- Contopus virens*, Wood Pewee. Several observed.
- Corvus brachyrhynchos*, American Crow. Common.
- Corvus ossifragus*, Fish Crow. Fairly common. Identified by call note.
- Spizella socialis*, Chipping Sparrow. This and the following observed repeatedly:
- Melospiza c. melodia*, Song Sparrow.
- Pipilo erythrophthalmus*, Chewink.
- Progne subis*, Purple Marten.
- Hirundo erythrogastra*, Barn Swallow.
- Iridoprocne bicolor*, Tree Swallow. Also on the beach.
- Vireo olivaceus*, Red-eyed Vireo.
- Geothlypis trichas*, Maryland Yellowthroat.
- Thryothorus ludovicianus*, Carolina Wren.
- Toxostoma rufum*, Brown Thrasher. Also seen on the beach.
- Merula migratoria*, Robin. Also on beach.
- Sialia sialis*, Bluebird.

Report on the Spring Migration of 1908

COMPILED BY WITMER STONE

The remarks of last year's report as to the value of the Club's migration record apply equally well to the coming season. It is of the utmost importance that we should not lose the services of any of the members of our Corps, and it is especially desirable that the number of observers within ten miles of Philadelphia be doubled. Those who are now on our list will confer a great favor by sending the names of others who are willing to keep records, and by making personal appeals to them to do so. Applications for blanks, etc., should be addressed to Mr. Alfred C. Redfield, Wayne, Penna., who will superintend this branch of the Club's work for the coming season.

Schedules covering the spring migration of 1908 were received from the following fifty-six stations:

New Jersey.

Cape May, H. Walker Hand.
Vineland, Miss Alice K. Prince.
Downtown (near Newfield), W. W. Fair.
Yardville, Rachel E. Allinson.
Trenton, C. C. and R. M. Abbott.
Princeton, Chas. H. Rogers.
Bordentown, Minnie V. Flynn.
Beverly, J. Fletcher Street.
Burlington, Helen F. Carter.
Rancocas, Emily Haines.
Moorestown, Anna A. Mickle.
Haddonfield, Mrs. E. Tomlinson Gill, Mrs. F. Morse Archer
and Mrs. Wm. J. Hamlin.
Pensauken, C. J. Hunt.

Pennsylvania.

Kennett Square, Charles J. Pennock.
Mendenhall, Wm. Carter.
Concordville, Mrs. K. R. Styer and J. P. Willits.
Swarthmore, David E. Harrower.
Swarthmore, George S. Roberts.
Lansdowne, John D. Carter.
Lansdowne, Louisa M. Jacob.
Lansdowne, Marion A. Honsaker.
Lansdowne, Anna D. White.
Lansdowne, Friends' School.
Lansdowne, A. J. Pennock.
Collingdale, Paul L. Lorrilliere.
Media, Lydia G. Allen.
Media, Edith L. Palmer.
Ardmore, Wm. L. Baily.
Haverford, Reynold A. Spaeth.
Haverford, L. C. Petry and W. E. Lewis.
Wayne, Alfred C. Redfield.
Wayne, L. S. Pearson.
Wayne, Edwin B. Bartram.
Bryn Mawr, Emily H. Thomas.
Collegeville, Henry Fox.
West Philadelphia, Thos. R. Hill.
West Philadelphia, Mrs. Thos. R. Hill.
Wissahickon, John R. Pickering, Jr.
Germantown, Frank Miles Day.
Germantown, Miriam F. Solis Cohen.
Germantown, Hilda Justice.
Germantown, Arthur F. Hagar.
Olney, George S. Morris.
Oak Lane, John W. Allen.
Frankford, Richard F. Miller.
Fox Chase, Alexander Patman.
Bristol, Thomas D. Keim.
Glenside, Richard C. Harlow.
Woodbourn, Edward Pickering, Jr.
George School, Students.

George School, Wm. E. Roberts.

George School, Jesse Packer.

Easton, Edw. J. F. Marx.

Columbia, Wm. F. Rochow.

Marietta, W. H. Buller.

Lopez, Otto Behr.

The spring migration of 1908 at Philadelphia was more irregular than usual apparently owing to the more frequent rises and falls in the temperature and the consequent breaking-up of large waves into a number of smaller ones. The greatest movements were on March 27, April 25-26, May 2-3; 8-9 and 13; that of April 25-26 being the largest. On the whole the dates of arrival were early. Of sixty-four species concerning which we have the fullest record the first arrival within ten miles of Philadelphia was earlier than the average of the past six years in 40 species, equal to the average in 7 and later in 17. Taking bulk arrivals 39 species were earlier than the average, 5 equal and 20 later. Owing to the well-known irregularity of early stragglers however, the first arrival in some species may be early while the bulk movement is late and vice versa. In fact in the above statement which seems to agree so closely there are 26 species in which one date is early and the other late.

Taking the birds whose bulk movement usually occurs in February or March we find that all were from two to nine days earlier than the average except the Fox Sparrow (2 days late) and the Flicker, Meadow Lark and Field Sparrow, which being partially resident, are not very satisfactory for migration studies. The Phoebe was seven days earlier than the average and one day earlier than ever before. Among the April migrants the bulk movements were early or normal in all but two species, the Bank Swallow and Chimney Swift, which were respectively two and three days later than the average.

The wave of April 23 and 26 occasioned remarkably early movements on the part of many species; the Brown Thrasher, House Wren, Grasshopper Sparrow, Maryland Yellowthroat, Solitary Vireo, Yellow Warbler, Ovenbird, Catbird and Wood Thrush came in bulk three to four days earlier than the average and from one to two days earlier than ever before recorded.

The early May migrants were usually a day or two earlier than the average; the White-eyed and Red-eyed Vireos, Baltimore Oriole and the Black-throated Blue Warbler making the earliest bulk movements recorded for these species.

Most of the later May migrants were late, owing, to the cooler rainy weather that prevailed from May 4 to 8. The Chat, Rose-breasted Grosbeak, Indigo Bird, Olive-backed Thrush, Yellow-billed Cuckoo, Hummingbird, Wood Pewee, Black-poll, Kentucky, Magnolia and Canada Warblers were all later than the average by from one to four days.

The dates of bulk arrival for the 64 species discussed above will be found in the last column of the Philadelphia schedule pp. 49-52. The date is that upon which the species had arrived at one-half of the stations at which it was recorded, disregarding entirely the last quarter of the records, which represent in the majority cases late or erroneous dates.

For example the House Wren was recorded as arriving as follows; at one station on April 16th, three on the 19th, two on the 20th, one on the 21st, four on the 23rd, five on the 24th, five on the 25th, five on the 26th, two on the 27th and one on May 1st, at twenty-nine stations in all. Discarding the last quarter of these records as probably later than the bird actually arrived we have twenty-two left, and the bird had reached eleven of these (one-half) by April 23 which we take as the date of bulk arrival.

NAME.	Moorestown, N. J.	N. 1; E. 12.1	Haddonfield, N. J.	S. 5; E. 6.	Pensauken, N. J.	N. 0; E. 8.	Media, Pa.	S. 2; W. 12.	Swarthmore, Pa.	S. 3; W. 10.	Collingdale, Pa.	S. 3; W. 6.	Lansdowne, Pa.	S. 1; W. 6.	Ardmore and Haverford, Pa.	N. 4; W. 8.	Bryn Mawr, Pa.	Wayne, Pa.	N. 6; W. 11.	Germanstown, Phila.	N. 6; W. 1.	Oak Lane, Phila.	N. 7; E. 2.	Fox Chase, Phila.	Frankford, Phila.	N. 5; E. 5.	Olney, Phila.	N. 6; E. 3.	Bulk Arrival at Phila., 1908.
Canada Goose	May 13												Mar. 22	Mar. 11										Mar. 7	Mar. 26	Mar. 9			
Green Heron																													
Night Heron																													
Spotted Sandpiper																													
Solitary Sandpiper																													
Killdeer																													
Dove																													
Osprey																													
Turkey Vulture																													
Yellow-billed Cuckoo																													
Black-billed Cuckoo																													
Kingfisher																													
Yellow-bellied Sapsucker																													
Red-headed Woodpecker																													
Flicker																													
Whip-poor-will																													
Nighthawk																													
Chimney Swift																													
Hummingbird																													
Kingbird																													
Great-crested Flycatcher																													
Phoebe																													

* The relative positions of the stations are indicated by the number of miles N. or S. and E. or W., that each one is distant from Philadelphia, Pa., i. e., its latitude and longitude with reference to the City Hall.

NAME.	Moorstown, N. J.	Haddonfield, N. J.	Pensauken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Havertford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	Germanstown, Phila.	Oak Lane, Phila.	Fox Chase, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival at Phila., 1908.
Wood Pewee	May 15	May 13	May 16	May 13	May 13	May 23	May 13	May 13	May 11	May 9	May 12	May 16	. . .	. . .	May 5	May 13
Green-crested Flycatcher.	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 15	May 15	May 30	. . . . .	May 16	. . . . .	. . . . .	. . . . .	. . . . .	May 18	May 13
Least Flycatcher . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 10	May 10	May 9	. . . . .	Apr. 29	. . . . .	. . . . .	. . . . .	. . . . .	Apr. 21	May 8
Bobolink	May 8	May 8	. . . . .	May 10	. . . . .	May 12	May 12	May 12	. . . . .	Mar. 7	. . . . .	. . . . .	May 9	May 9	May 8	May 8
Cowbird	May 16	May 16	. . . . .	Mar. 14	Mar. 14	Mar. 22	Mar. 22	Mar. 12	. . . . .	Mar. 3	Apr. 2	May 5	May 21	Mar. 10	Mar. 10	Mar. 16
Red-winged Blackbird . .	Mar. 3	Mar. 5	Mar. 7	Mar. 15	Mar. 3	Mar. 11	Mar. 14	Mar. 3	. . . . .	Mar. 3	Mar. 4	Mar. 4	Mar. 28	Mar. 10	Mar. 2	Mar. 4
Meadow Lark	Res.	Res.	Mar. 11	Mar. 12	Feb. 5	Mar. 13	Mar. 15	Mar. 3	Mar. 21	Feb. 16	Mar. 10	Res.	Mar. 21	Res.	Res.	Mar. 10
Orchard Oriole	Apr. 28	May 3	May 16	Apr. 28	May 8	May 8	May 18	May 13	May 17	May 13	. . . . .	May 7	. . . . .	Apr. 30	May 14	May 5
Baltimore Oriole	Apr. 28	Apr. 26	May 16	Apr. 25	May 7	May 8	May 11	Apr. 29	. . . . .	Apr. 30	Apr. 29	May 7	. . . . .	May 4	. . . . .	May 1
Rusty Blackbird . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	Feb. 15	Feb. 27	Feb. 27	Feb. 23	Feb. 15	Feb. 28	Mar. 4	Mar. 7	Feb. 27	Feb. 15	Feb. 27
Purple Grackle	Mar. 3	Feb. 15	Mar. 4	Mar. 1	Feb. 27	Feb. 15	Feb. 27	Mar. 12	. . . . .	Mar. 28	. . . . .	Apr. 11	. . . . .	Mar. 10	Mar. 23	Mar. 23
Vesper Sparrow . . . . .	. . . . .	May 8	Apr. 5	Apr. 26	Mar. 21	Mar. 22	. . . . .	Apr. 17	. . . . .	Mar. 28	May 4	Apr. 14	. . . . .	Mar. 9	Mar. 20	Mar. 28
Savanna Sparrow . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 17	. . . . .	Apr. 30	. . . . .	Apr. 22	Mar. 28	Apr. 30	. . . . .	Apr. 24	May 8	Apr. 24
Grasshopper Sparrow . . .	Apr. 28	. . . . .	. . . . .	Apr. 19	Apr. 24	May 17	. . . . .	Apr. 30	. . . . .	Apr. 22	Mar. 28	Apr. 30	. . . . .	Apr. 24	May 8	Apr. 24
Chipping Sparrow	Mar. 27	Apr. 15	Mar. 2	Mar. 30	Mar. 28	Apr. 5	Apr. 9	Mar. 28	Apr. 7	Mar. 28	Apr. 1	Mar. 14	Apr. 18	Mar. 20	Mar. 27	Mar. 28
Field Sparrow	Apr. 14	Mar. 30	Mar. 15	Mar. 29	Apr. 3	. . . . .	Mar. 24	Mar. 27	. . . . .	Mar. 8	Mar. 29	Mar. 28	Mar. 10	Feb. 14	. . . . .	Mar. 26
Swamp Sparrow . . . . .	. . . . .	. . . . .	Apr. 9	. . . . .	Apr. 17	. . . . .	Apr. 26	Apr. 26	. . . . .	Mar. 30	Mar. 30	May 2	. . . . .	Feb. 29	. . . . .	Mar. 26
Fox Sparrow . . . . .	. . . . .	Apr. 11	Mar. 8	Mar. 10	Feb. 15	. . . . .	Mar. 12	Mar. 22	Mar. 21	Mar. 10	Mar. 14	Mar. 1	Mar. 10	Mar. 10	Mar. 14	Mar. 10
Chewink	May 9	Apr. 7	Apr. 26	Mar. 31	Mar. 31	Apr. 25	Apr. 19	Apr. 22	Apr. 25	Mar. 28	Apr. 18	May 2	. . . . .	Apr. 24	Apr. 19	Apr. 19
Rose-breasted Grosbeak.	May 12	. . . . .	. . . . .	. . . . .	May 11	. . . . .	Apr. 29	May 9	May 11	May 17	May 10	. . . . .	. . . . .	May 8	May 3	May 8
Indigobird	May 13	May 16	May 24	May 14	May 7	May 26	May 12	May 11	. . . . .	May 10	May 10	. . . . .	. . . . .	May 1	May 3	May 11
Scarlet Tanager . . . . .	. . . . .	May 2	May 20	May 10	Apr. 30	May 3	Apr. 27	May 12	May 15	Apr. 30	May 5	May 2	. . . . .	Apr. 28	May 8	May 2
Purple Martin	Apr. 12	Apr. 16	. . . . .	. . . . .	May 20	Apr. 5	. . . . .	May 24	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	May 5	. . . . .	May 5

NAME.	Mooresdown, N. J.	Haddonfield, N. J.	Pensauken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	Germanstown, Phila.	Oak Lane, Phila.	Fox Chase, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival at Phila., 1908.
Cliff Swallow														May 1		
Barn Swallow	May 4	Apr. 29	May 8	Apr. 25	Apr. 11	Apr. 25		Apr. 17	Apr. 7	Apr. 11	Apr. 29	Apr. 13	Apr. 18	Mar. 30	Apr. 24	Apr. 18
Tree Swallow	Apr. 21	Apr. 28	Apr. 12	May 10	Apr. 11	Apr. 29		May 24		Mar. 29	Apr. 22			Apr. 28	Apr. 26	Apr. 12
Bank Swallow		May 2	May 24		Apr. 12	Apr. 29					Apr. 21			Apr. 25		Apr. 21
Rough-winged Swallow				Apr. 12	Apr. 17	May 3	Apr. 16	Apr. 23		Apr. 10	Apr. 25			Apr. 13	Apr. 26	Apr. 13
Cedarbird	May 25	Apr. 29	Mar. 8	Mar. 24	Feb. 20		May 14	Apr. 23		May 16	May 20	Apr. 19		Mar. 24		
Red-eyed Vireo	May 4	Apr. 29	May 24	May 13	Apr. 24	May 16	Apr. 21	May 10	May 11	May 13	Apr. 25	May 12		May 5	Apr. 24	May 8
Warbling Vireo	May 21				May 17	May 8	May 5	May 5		May 9	May 16	May 12		May 16		May 9
Yellow-throated Vireo	Apr. 27				May 3	May 3	Apr. 20	May 12		May 1	May 5	May 15		May 9	May 10	May 3
Solitary Vireo					Apr. 12		Apr. 19	Apr. 15		Apr. 18		May 12		May 9	Apr. 19	
White-eyed Vireo		Apr. 26	Apr. 26	Apr. 28	May 2	Apr. 26	Apr. 28	May 11		Apr. 26	May 9	May 12		Apr. 30	May 9	Apr. 29
Black and White Warbler	Apr. 13	Apr. 28	Apr. 26	May 8	Apr. 25		Apr. 22	Apr. 25	Apr. 25	Apr. 25	May 2	Apr. 19		Apr. 28	Apr. 17	Apr. 25
Worm-eating Warbler					May 17		Apr. 29	May 12		May 1	May 14	May 16		May 1		
Blue-winged Warbler				May 10	May 2		Apr. 29	May 12		Apr. 28	Apr. 28	May 16	May 17	Apr. 26	May 5	May 2
Parula Warbler	May 4		May 2	May 10	May 4		Apr. 29	Apr. 28	May 11	Apr. 28	May 11	May 16		May 8	May 10	May 2
Yellow Warbler	Apr. 27	Apr. 26	Apr. 26	Apr. 27	May 4	Apr. 26	Apr. 27	May 1		May 16	May 2	May 16		Apr. 24	Apr. 25	Apr. 26
Black-throated Blue Warbler	May 8	May 9	May 2	May 10	May 7	May 8	Apr. 29	Apr. 26	Apr. 25	May 2	May 9	May 16		Apr. 28	Apr. 28	May 2
Myrtle Warbler	May 8	May 3		May 3	Apr. 12	May 3	May 1	Apr. 25	Apr. 17	Mar. 30	Apr. 26	May 2		Apr. 22	Apr. 16	Apr. 24
Magnolia Warbler				May 17	Apr. 25		May 11	May 10	May 4	May 13	May 15	May 16		Apr. 30	Apr. 29	May 10
Chestnut-sided Warbler	May 3			May 10	Apr. 28		May 10	May 3		May 3	May 15	May 16		Apr. 29	May 9	May 3
Black-poll Warbler	May 13	May 12		May 14	May 16		May 13	May 13	May 17	May 13	May 20			May 16	May 12	May 14
Blackburnian Warbler		May 13	May 2	May 10	May 12		May 16		May 4	Apr. 29	May 19	May 16		Apr. 28	May 11	May 9
Black-throated Green Warbler	May 8	May 9		May 10	May 11		Apr. 29	Apr. 28	Apr. 25	Apr. 25	May 13	May 16		May 8	May 4	May 8

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Pensauken, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	Germanstown, Phila.	Oak Lane, Phila.	Fox Chase, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival at Phila., 1908.
Pine Warbler	May 8	May 8	May 8	Apr. 12	Apr. 11	May 3	May 3	Apr. 26	Apr. 25	Apr. 14	Apr. 18	Apr. 13	Apr. 13	Apr. 6	Apr. 9	Apr. 11
Yellow Palm Warbler	May 8	May 8	May 8	Apr. 25	Apr. 24	May 3	May 3	Apr. 26	Apr. 25	May 2	May 16	May 16	May 16	Apr. 7	May 10	Apr. 11
Prairie Warbler	Apr. 26	May 8	Apr. 26	Apr. 25	Apr. 24	May 3	Apr. 28	Apr. 26	Apr. 25	Apr. 24	Apr. 26	Apr. 26	Apr. 26	Apr. 28	Apr. 26	Apr. 26
Ovenbird	May 13	May 13	May 13	Apr. 25	Apr. 24	May 3	Apr. 28	Apr. 26	Apr. 25	Apr. 26	May 2	May 2	May 2	May 1	May 1	Apr. 28
Water Thrush	Apr. 27	Apr. 23	Apr. 26	Apr. 25	Apr. 24	Apr. 26	Apr. 25	Apr. 26	Apr. 25	Apr. 19	May 5	May 5	May 5	Apr. 28	May 11	May 9
Kentucky Warbler	May 13	May 13	May 13	May 10	May 11	May 3	May 4	May 3	May 3	May 10	May 5	May 5	May 5	Apr. 28	May 11	May 9
Maryland Yellowthroat	Apr. 27	Apr. 23	Apr. 26	Apr. 25	Apr. 24	Apr. 26	Apr. 25	Apr. 26	Apr. 25	Apr. 19	Apr. 22	Apr. 24	Apr. 18	Apr. 26	Apr. 26	Apr. 25
Chat	May 13	May 17	May 13	May 8	Apr. 30	Apr. 26	Apr. 26	May 12	May 12	May 9	May 4	May 4	May 4	Apr. 16	May 10	May 9
Canada Warbler	May 3	May 13	May 13	May 10	May 11	May 3	May 4	May 3	May 3	May 13	May 5	May 5	May 5	May 16	May 10	May 13
Redstart	May 12	May 13	May 13	May 10	May 11	May 3	May 4	May 3	May 3	May 13	May 5	May 5	May 5	May 16	May 10	May 13
Catbird	Apr. 26	Apr. 26	Apr. 26	Apr. 25	Apr. 23	Apr. 26	Apr. 24	Apr. 26	Apr. 25	Apr. 24	Apr. 22	Apr. 26	May 16	Apr. 26	Apr. 25	Apr. 25
Brown Thrasher	Apr. 14	Apr. 16	Apr. 9	Apr. 19	Apr. 17	Apr. 23	Apr. 23	Apr. 19	Apr. 10	Apr. 25	Apr. 8	Apr. 23	May 16	Apr. 6	Apr. 17	Apr. 19
House Wren	Apr. 26	Apr. 23	Apr. 26	Apr. 23	Apr. 16	May 3	Apr. 19	Apr. 23	Apr. 25	Apr. 21	Apr. 20	May 4	May 4	Apr. 26	Apr. 24	Apr. 23
Long-bill'd Marsh Wren	Apr. 14	May 24	May 24	May 24	Apr. 16	May 3	Apr. 19	Apr. 23	Apr. 25	Apr. 21	Apr. 20	May 4	May 4	May 1	Apr. 24	May 1
Ruby-crowned Kinglet	May 8	Apr. 29	Apr. 9	Apr. 12	Apr. 10	Apr. 26	Apr. 11	Apr. 13	Apr. 7	Apr. 8	Apr. 9	Apr. 5	Apr. 5	Apr. 11	Apr. 12	Apr. 10
Wood Thrush	May 3	May 3	May 16	May 3	Apr. 25	Apr. 26	Apr. 23	Apr. 26	Apr. 25	Apr. 24	Apr. 23	Apr. 27	Apr. 19	Apr. 27	Apr. 25	Apr. 26
Wilson's Thrush	May 13	May 13	May 13	May 13	May 17	May 3	May 17	May 8	May 11	May 11	May 17	May 17	May 17	May 18	May 8	May 11
Gray-checked Thrush	May 13	May 13	May 13	May 13	May 17	May 3	Apr. 29	May 13	May 11	May 11	May 17	May 17	May 17	May 18	May 8	May 11
Olive-backed Thrush	May 13	May 13	May 13	May 13	May 17	May 3	Apr. 29	May 13	May 11	May 11	May 17	May 17	May 17	May 18	May 8	May 11
Hermit Thrush	Mar. 2	Mar. 2	Mar. 2	Mar. 3	Feb. 12	Mar. 7	Apr. 11	Apr. 14	Apr. 7	Apr. 10	Apr. 9	Apr. 12	Apr. 12	Apr. 1	Apr. 9	Apr. 12
Robin	Mar. 2	Mar. 2	Mar. 2	Mar. 3	Feb. 12	Mar. 7	Feb. 22	Mar. 2	Feb. 27	Feb. 15	Feb. 14	May 13	Mar. 14	Feb. 27	Mar. 2	Mar. 2
Bluebird	Mar. 2	Mar. 2	Feb. 28	Res.	Feb. 16	Feb. 17	Feb. 17	Mar. 3	Mar. 3	Feb. 16	Feb. 27	Feb. 27	Mar. 15	Feb. 27	Mar. 2	Feb. 27

Flicker
 Whip-poor-w
 Nighthawk...
 Chimney Swi
 Hummingbird
 Kingbird
 Great-crested
 Phoebe
 Bobolink
 Cowbird
 Red-winged I
 Baltimore Ori
 Purple Grack
 Chipping Spa
 Chewink
 Indigobird ..
 Scarlet Tanag
 Purple Martin
 Barn Swallow
 Red-eyed Vir
 Black and W
 Chestnut-side
 Ovenbird
 Maryland Yel
 Chat
 Catbird
 Brown Thrash
 House Wren
 Wood Thrush
 Hermit Thrush
 Robin
 Bluebird



NAMES.

	Cape May, N. J. E. 13; S. 72.	Vineyard, N. J. E. 7; S. 32.	Downtown, N. J. W. 1; S. 28.	Kennett Square, Pa. W. 30; S. 8.	Mendenhall, Pa. W. 26; S. 8.	Concordville, Pa. W. 20; S. 5.	Collegeville, Pa. W. 16; N. 18.	Rancocas, N. J. E. 16; N. 4.	Beverly, N. J. E. 13; N. 8.	Barlinton, N. J. E. 17; N. 9.	Bristol, Pa. E. 17; N. 10.	Bordentown, N. J. E. 25; N. 15.	Yardville, N. J. E. 25; N. 15.	Trenton, N. J. E. 23; N. 16.	Princeton, N. J. E. 28; N. 29.	Glenside, Pa. E. 6; N. 10.	Woodbourne, Pa. E. 15; N. 17.	George School, Pa. E. 11; N. 18.	Easton, Pa. W. 2; N. 50.	Columbia, Pa. W. 71; N. 5.	Marietta, Pa. W. 74; N. 7.	Lopez, Pa. W. 60; N. 103
Flicker	Res.	Res.	Mar. 20				Mar. 12	Mar. 15	Feb. 22	Mar. 20	Mar. 8	Mar. 20	Mar. 15	Res.	Res.	Res.	Res.	Res.	Mar. 27	Mar. 22		Mar. 27
Whip-poor-will	Apr. 13	Apr. 7	Apr. 8		Apr. 26		May 22	May 20			Apr. 19	Apr. 19		May 13		May 9			May 17	May 17	May 23	Apr. 23
Nighthawk							May 22	May 20			May 2	May 2		May 13		May 7			May 17	May 17	May 23	Apr. 23
Chimney Swift	Apr. 26	Apr. 10	Apr. 28	Apr. 20	Apr. 27	Apr. 22	Apr. 22	Apr. 23	Apr. 11	Apr. 5	Apr. 21	Apr. 25	Apr. 25	Apr. 25	Apr. 23	Apr. 21	Apr. 27	Apr. 22	Apr. 22	Apr. 26	Apr. 21	May 17
Hummingbird		May 24			Apr. 29	Apr. 22	Apr. 22	May 13		May 4		May 8	May 11	May 20	May 11	May 8	May 9	May 8	May 9	May 15	May 15	May 15
Kingbird	Apr. 28	May 3	Apr. 27	Apr. 27	Apr. 26	Apr. 25	Apr. 25	May 13			May 9	Apr. 12	Apr. 12	Apr. 30	Apr. 25	Apr. 27	Apr. 27	Apr. 27	Apr. 27	May 6		May 15
Great-crested Flycatcher	Apr. 28	May 3	Apr. 27	Apr. 27	Apr. 26	Apr. 25	May 11	Apr. 26	May 3	Apr. 30	Apr. 29	Apr. 6	May 8	May 10	Apr. 29	Apr. 27	Apr. 19	Apr. 26	Apr. 26	May 6		May 15
Phoebe		Apr. 15		Mar. 18	Mar. 12	Mar. 16	Mar. 15	Apr. 4	Mar. 27	Mar. 15	Apr. 10	Mar. 14	Mar. 14	Mar. 26	Mar. 13	Mar. 14	Mar. 26	Mar. 11	Mar. 22	Apr. 1	Mar. 21	Mar. 27
Bobolink	May 8				Apr. 27	May 11					May 9		May 19		Apr. 26		May 2	Apr. 27	Apr. 1	May 7		May 7
Cowbird	May 2				Apr. 8	Mar. 3	Apr. 1		Apr. 19			Apr. 25	Apr. 25	Mar. 13	Mar. 4	Apr. 30	Mar. 30	Mar. 3	Apr. 30	Mar. 3	Mar. 29	Mar. 12
Red-winged Blackbird	Res.	Apr. 16	Mar. 3	Mar. 12	Mar. 1	Feb. 27	Mar. 11	Mar. 14	Feb. 16	Mar. 28	Mar. 30	Mar. 13	Mar. 3	Feb. 26	Feb. 27	Mar. 3	Mar. 30	Mar. 3	Mar. 30	Mar. 3	Mar. 29	Mar. 12
Baltimore Oriole	Apr. 26	May 4	Apr. 26	Apr. 25	Apr. 28	Apr. 26	Apr. 28	Apr. 29	Apr. 26	Apr. 30	Apr. 25	Apr. 25	Apr. 30	May 5	May 8	May 2	May 10	Apr. 26	Apr. 28	May 3	May 7	Mar. 13
Purple Grackle	Feb. 21			Feb. 16	Mar. 12	Feb. 15	Mar. 4	Mar. 2	Mar. 9	Mar. 9	Mar. 7	Mar. 14	Mar. 3	Feb. 7	Feb. 27	Feb. 23	Mar. 3	Feb. 16	Mar. 5	Mar. 4	Mar. 4	Mar. 4
Chipping Sparrow	Mar. 31	Apr. 2	Mar. 27	Mar. 28	Apr. 5	Mar. 28	Mar. 30	Mar. 28	Mar. 27	Apr. 5	Mar. 28	Mar. 8	Apr. 5	Mar. 26	Mar. 29	Mar. 25	Mar. 27	Mar. 30	Apr. 6	Apr. 10	Apr. 24	Apr. 24
Chewink	Mar. 14	Apr. 23	Apr. 14	Apr. 23	Apr. 24	Apr. 18	Apr. 23	Apr. 14	Apr. 19	Apr. 20	Apr. 28	Apr. 19	Apr. 25	Apr. 9	Apr. 24	Apr. 7	Apr. 27	Apr. 6	Apr. 26	Apr. 7	May 8	Apr. 23
Indigobird	May 7	May 28		May 4	May 13	Apr. 28	May 18	May 14			May 14	May 8	May 11	May 10	May 10	May 2	May 17	May 13	May 9	May 14	May 10	May 11
Scarlet Tanager	May 5	May 10	May 4	May 13	May 12	May 11	May 13	May 9 ¹	May 9 ¹	May 8	May 9	May 2	May 16	May 9	May 13	Apr. 22	May 2	Apr. 29		May 16		May 13
Purple Martin	Apr. 18	Apr. 11	Apr. 4	Apr. 6	May 24	May 19					Apr. 19	Apr. 23	May 4	Apr. 29	Apr. 12	May 18	May 18	May 18				
Barn Swallow	Apr. 24	May 3	Apr. 18	Apr. 14	Apr. 11	Apr. 23				Apr. 27	Apr. 12	Apr. 20	Apr. 12	Apr. 26	Apr. 12	Apr. 26	Apr. 12	Apr. 26	Apr. 12	Apr. 30	Apr. 12	Apr. 22
Red-eyed Vireo		May 14	May 13	May 10	Apr. 29	May 9	May 13	May 13	Apr. 29	May 11	May 4	Apr. 27	May 12	May 20	May 12	May 8	May 17	May 12	May 23			Apr. 30
Black and White Warbler		May 18	Apr. 26	May 3		Apr. 28	Apr. 27	Apr. 26	May 3	Apr. 30	May 9	Apr. 10	Apr. 29	Apr. 25	Apr. 23	Apr. 24	Apr. 23	Apr. 28	May 3			Apr. 29
Chestnut-sided Warbler		May 13		May 10		May 11	May 4	May 14			May 8	May 14	May 4	May 17	May 1	May 9	May 3		May 8	May 13		Apr. 29
Ovenbird	May 10		Apr. 26	Apr. 26		Apr. 24	May 4	Apr. 26	Apr. 23	Apr. 28	May 1	Apr. 26	May 10	May 8	Apr. 23	May 2	May 12	Apr. 24	Apr. 28	Mar. 8		May 6
Maryland Yellowthroat	Apr. 26	Apr. 24	Apr. 26	Apr. 23		Apr. 24	Apr. 28	Apr. 24	May 3	Apr. 25	May 8	Apr. 24	Apr. 24	Apr. 27	Apr. 27	May 17	Apr. 20	Apr. 30				May 6
Chat	Mar. 11	May 28	May 17		May 1	Apr. 28		May 10	May 10		May 14	May 4	May 8	May 13	May 8	Apr. 28	May 11	May 18	May 9			May 10
Catbird	Apr. 26	Apr. 12	Apr. 26		Apr. 22	Apr. 27	Apr. 26	Apr. 26	Apr. 26	Apr. 26	May 2	Apr. 28	Apr. 27	Apr. 26	Apr. 26	Apr. 21	Apr. 19	Apr. 26	Apr. 26	Apr. 26	May 10	May 14
Brown Thrasher		Apr. 4	Apr. 23	Apr. 20	Apr. 13	Apr. 13	Apr. 22	Apr. 24	Apr. 20	Apr. 25	Apr. 19	Apr. 24	Apr. 15	Apr. 23	Apr. 12	Apr. 24	Apr. 19	Apr. 19	Apr. 19	May 3	May 10	Apr. 26
House Wren	Apr. 26		Apr. 15	Apr. 20	Apr. 25	Apr. 14	Apr. 27	Apr. 25	Apr. 19		May 3	Apr. 25	Apr. 14	Apr. 27	May 8	Apr. 24	May 18	Apr. 29	Apr. 17		May 15	Apr. 28
Wood Thrush	Apr. 26			Apr. 26	Apr. 26	Apr. 27	Apr. 28	Apr. 29	Apr. 26	Apr. 27	May 5	Apr. 25	Apr. 29	Apr. 27	May 8	Apr. 26	May 8	Apr. 26	Apr. 29		Apr. 30	Apr. 27
Hermit Thrush				Apr. 3		Apr. 13	Apr. 7		Apr. 12		Apr. 12	Apr. 20	Apr. 14		Apr. 14	Mar. 24		Apr. 6	Apr. 11			Apr. 10
Robin	Res.		Feb. 14	Mar. 3		Mar. 1	Mar. 9	Mar. 3	Mar. 1	Mar. 2	Feb. 29	Feb. 20	Mar. 3	Res.	Mar. 2	Feb. 22	Mar. 3	Mar. 3	Mar. 7	Mar. 5	Mar. 2	Mar. 12
Bluebird	Res.		Feb. 15			Feb. 16	Mar. 10	Mar. 5	Mar. 8	Mar. 5	Mar. 7	Res.	Mar. 8	Res.	Res.	Feb. 16	Res.	Res.	Mar. 7	Mar. 8	Mar. 7	Mar. 8

¹ Millville, N. J.

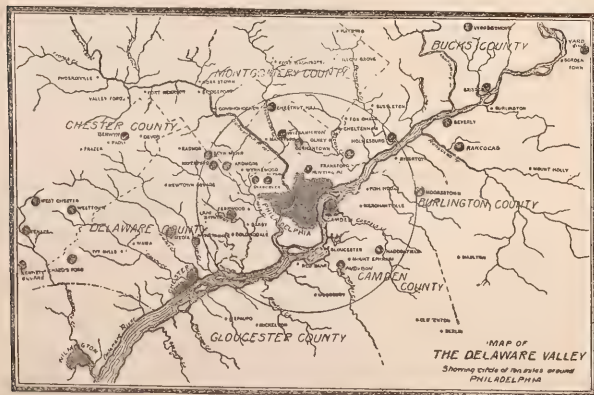


TABLE II.

SPRING MIGRATION, 1908.

EARLIEST DATES OF ARRIVAL OF THIRTY-TWO SPECIES AT TWENTY-TWO STATIONS OUTSIDE THE PHILADELPHIA CIRCLE.

*List of Other Species Reported by Observers During 1908, and
Additional Notes. Winter Notes Refer to Winter of
1907-8. Localities are in Pennsylvania
Unless Otherwise Indicated.*

Colymbus auritus, Horned Grebe. Cape May, N. J., March 31 (*Hand*); Bridesburg, March 19 and 25 (*Miller*).

Podilymbus podiceps, Pied-billed Grebe. Beverly, N. J., March 21, 24, 27 and 30 (*Street*); George School, March 23 (*Scholars*); George School, March 25 (*Packer*); Wayne, March 29 (*Pearson*); Radnor, March 23 (*Redfield*); Tinicum, March 26 (*Redfield*); Princeton, N. J., Sept. 26-Oct. 31, March 13-Apr. 30 (*Rogers*); Richmond, March 21 (*Miller*); Delair, N. J., March 29 (*Miller*).

Gavia immer, Loon. Beverly, N. J., four on the river, April 25 (*Street*); four at Cape May, N. J., May 7 (*Hand*).

Larus argentatus, Herring Gull. Three near Yardley, N. J., April 16 (*Packer*); last seen at Cape May, N. J., May 8 (*Hand*); Berwyn, two April 1 (*Redfield*); Wayne one April 24 (*Pearson*); Princeton, N. J., March 7 (*Rogers*); Frankford, Sept. 19-May 6 (*Miller*); Tinicum, May 5 (*Harlow*).

Larus atricilla, Black-headed Gull. Cape May, N. J., April 20 (*Hand*).

Sterna hirundo, Bennett, N. J., May 9 (*Harlow*).

Phalacrocorax dilophus, Double-crested Cormorant. Flocks passed along shore all day at Cape May, N. J., April 21 (*Hand*).

Merganser americanus, American Merganser. Princeton, N. J., March 13 (*Rogers*); Bridesburg, May 19 (*Miller*); George School, three on Jan. 19, ten April 13 (*Packer*); plentiful at Cape May, N. J., April 6 (*Hand*).

Merganser serrator, Red-breasted Merganser. One shot Tinicum, Mar. 21 (*Redfield* and *Pearson*).

Lophodytes cucullatus, Hooded Merganser. Princeton, N. J., April 22 (*Rogers*); one shot Salem, N. J., March 21 (*Miller*).

Anas boschas, Mallard Chalfont. Nov. 16, 1907 (*Harlow*).

Anas rubripes, Black Duck. One shot Tinicum, Mar. 21 (*Redfield* and *Pearson*); Princeton, N. J., Oct. 3, Mar. 15-Apr. 2 (*Rogers*); Fish House, N. J., Mar. 25 (*Miller*); Tinicum, Mar. 26 (*Harlow*).

Mareca americana, Baldpate. Four shot Tinicum, Mar. 21 (Redfield and Pearson).

Dafila acuta, Pintail. One shot Tinicum, March 26 (Redfield).

Aix sponsa, Wood Duck. Princeton, N. J., last seen Oct. 31, 1907, first seen April 12, 1908 (Rogers); nest with sixteen eggs at Salem, N. J., April 26 (W. B. Crispin).

Aythya marila, Greater Scaup Duck. One shot Tinicum, March 21 (Redfield and Pearson); Princeton, N. J., Oct. 13, 1907 (Rogers).

Aythya affinis, Lesser Scaup Duck. Seven shot Tinicum, March 21 (Redfield and Pearson); four at Princeton, N. J., March 27–April 7 (Rogers); Fish House, N. J., March 25 and April 12 (Miller).

Charitonetta albeola, Bufflehead. Princeton, N. J., a pair March 12 and 14 (Rogers).

Harelda hyemalis, Old Squaw. Pair at Yardley, N. J. (Packer); Fish House, N. J., March 25 (Miller).

Erismatura jamaicensis, Ruddy Duck. Princeton, N. J., Oct. 13–19, 1907 (Rogers).

Branta bernicla, Brant. Beverly, N. J., March 29 (Street).

Branta canadensis, Canada Goose. Glenside, twelve on Sept. 19 (Harlow).

Botaurus lentiginosus, American Bittern. Ithan., April 8 (Bartram); Bristol, April 12 (Keim); Cape May, N. J., April 12 (Hand); Wayne, March 27, April 17 (Pearson); and one shot April 9 (Redfield); Fox Chase, April 7 (Miller).

Icobrychus exilis, Least Bittern. Richmond, eggs May 27 (Miller); Tinicum, May 22 (Harlow); eggs at Hackensack, N. J. June 6 (Harlow).

Ardea herodias, Great Blue Heron. Haverford, March 28 (Petty and Lewis); Bristol, February 11, 25 and 27 (Keim); Cape May, N. J., a few reported all winter, plentiful March 25–April 2 (Hand); Wayne, April 19 (Pearson); Tinicum, January 4 (Redfield); Moorestown, N. J., April 27 (Mickle); George School, April 7 (Packer); Princeton, N. J., Sept. 26–Oct. 19, 1907, April 4–26 (Rogers); Pensauken Creek, N. J., April 17, had eggs at Salem, N. J., April 12 (Miller).

Florida caerulea, Little Blue Heron. Flock of about a dozen at Palatine, N. J., July 17, two adults, rest young (Bartram).

Nycticorax n. naevius, Night Heron. Bird in gray plumage at George School, Jan. 19 (*Packer*); numerous at Bennett, N. J., May 23 (*Harlow*).

Rallus elegans, King Rail. Bridesburg, May 24, nest and eggs, June 12 (*Miller*); Richmond, Sept. 5, 1907 (*Harlow*).

Rallus virginianus, Virginia Rail. Concordville, April 28 (*Styer*); Bridesburg, May 24 (*Miller*).

Gallinula galeata, Florida Gallinule. Richmond, April 25, seven nests found, eggs nearly hatched, May 27 (*Miller*); eggs at Hackensack, N. J., June 6 (*Harlow*).

Fulica americana, Coot. Princeton, Oct. 14, 1907 (*Rogers*).

Philohela minor, Woodcock. Edge Hill, Nov. 23, 1907, and March 24 (*Harlow*); Wayne, March 30, May 3 (*Pearson*); Princeton, N. J., last seen 1907 on Nov. 13, first, March 13 (*Rogers*); Frankford, March 9, April 7; Bustleton, May 9, and Chestnut Hill, July 1 (*Miller*); eggs just hatching in nest at Bennett, N. J., May 9 (*Harlow*); Vineland, N. J., March 27 (*Prince*); George School, March 8 (*Packer*); Lopez, March 24 (*Behr*); Cape May, N. J., Feb. 17, not so great a spring flight as usual; seen daily, July 3 (*Hand*).

Gallinago delicata, Wilson's Snipe. Kennett Square, March 16 (*Pennock*); Concordville, April 30 (*Styer*); Vineland, N. J., March 9 (*Prince*); George School, March 15 (*Packer*); Cape May, N. J., March 14 (*Hand*); Wayne, April 16, 21, 22 (*Pearson*); Bridesburg, May 14 (*Miller*); League Island, March 25 (*Harlow*).

Tringa minutilla, Least Sandpiper. Cape May, N. J., April 28 (*Hand*); Wayne, May 2, 3, 16 (*Pearson*); Bennett, N. J., May 23 (*Redfield*); Princeton, N. J., one, April 30 (*Rogers*); Frankford, May 12; Richmond, May 27 (*Miller*).

Totanus melanoleucus, Greater Yellowlegs. Flock of twelve passed over Lansdowne, May 11, 6:20 p. m. (*Carter*); Princeton, N. J., Oct. 13, 1907 (*Rogers*); Bridesburg, May 14 (*Miller*); Tinicum, May 22 (*Harlow*).

Helodromas solitarius, Solitary Sandpiper. Last seen at Frankford, May 20 (*Miller*).

Bartramia longicauda, Bartramian Sandpiper. George School, April 12 and 24 (*Roberts and Packer*).

Numenius hudsonicus, Hudsonian Curlew. Cape May, N. J., April 18 (*Hand*).

Squatarola squatarola, Black-breasted Plover. Cape May, N. J., May 5 (*Hand*).

Oxyechus vociferus, Kildeer. One pair nested at Edge Hill, another at Fort Washington; rare breeder here (*Harlow*).

Arenaria interpres, Turnstone. Cape May, N. J., May 5 (*Hand*).

Hæmatopus palliatus, Oyster Catcher. One shot on Anchoring Island, Little Egg Harbor, N. J., July 31, 1907; in collection of C. K. Drinker (*Spaeth*).

Zenaidura macroura, Mourning Dove. Flock of thirty-six at Maple Shade, N. J., Dec. 25, 1907; eggs, Pensauken, N. J., April 17 (*Miller*).

Circus hudsonius, Marsh Hawk. Wayne, Sept. 14–April (*Pearson*).

Accipiter cooperi, Cooper's Hawk. Nest and eggs, Edge Hill, April 24; eggs at Doylestown, May 2 (*Harlow*).

Buteo borealis, Red-tailed Hawk. Wayne, Oct. 27–April 5 (*Pearson*); Princeton, N. J., Oct. 31–April 1 (*Rogers*).

Buteo lineatus, Red-shouldered Hawk. Wayne, August 18–March 12 (*Pearson*); Princeton, N. J., October 13–March 15 (*Rogers*).

Buteo platypterus, Broad-winged Hawk. Wayne, first seen, April 17; nest and eggs, May 16 (*Pearson*); Bustleton, April 14 (*Miller*); Princeton, N. J., last seen, Oct. 31, 1907; first, April 21 (*Rogers*).

Archibuteo lagopus sancti-johannis, Rough-legged Hawk. George School, Jan. 19 and Feb. 27 (*Packer*); one shot at Bordentown, N. J., March 13 (*Redfield*); another at Bennett, N. J., Dec., 1907 (*Harlow*).

Haliaeetus leucocephalus, Bald Eagle. Downingtown, May 10 (*Bartram*); three seen at one time, Cape May, N. J., April 26 (*Hand*); Wayne, one shot, Sept. 20 (*Pearson*); Edge Hill, Aug. 20–21, 1907 (*Harlow*).

Falco columbarius, Pigeon Hawk. Princeton, N. J., Oct. 14, 1907 (*Rogers*).

Strix pratincta, Barn Owl. One flew over Lansdowne, screaming, at 8:10 p. m., April 7 (*Carter*); Edge Hill, April 29 (*Harlow*); one found dead at Tinicum, March 26 (*Redfield*).

Asio wilsonianus, Long-eared Owl. Moorestown, N. J., Feb. 10 (*Mickle*); Two shot at Edge Hill, Nov. 9, 1907 (*Harlow*).

Asio accipitrinus, Short-eared Owl. One at Tinicum, March 21 and two found dead (*Pearson*); one shot Bridesburg, Dec. 6, 1907 (*Harlow*).

Cryptoglaux acadicus, Acadian Owl. Frankford, Nov. 11 and Dec. 18, 1907 (*Miller*).

Megascops asio, Screech Owl. Nests with eggs Wayne, May 5 (*Redfield*); Glenside, April 5 (*Harlow*).

Bubo virginianus, Great Horned Owl. Bustleton, Dec. 25, 1907 (*Miller*).

Ceryle alcyon, Kingfisher. Tinicum, Jan. 4, Wayne, Dec. 22, 1907 (*Redfield*); one wintered at Tinicum (*Harlow*).

Dryobates villosus, Hairy Woodpecker. Cheltenham, one wintered (*G. S. Morris*), Beverly, N. J., April 5 (*Street*); Bristol, Nov. 16 and 28, 1907 (*Keim*); Moorestown, N. J., Dec. 7, 1907 (*Mickle*); nested at Chamounix, W. Fairmont Park in 1907, two young with parents May 13 (*Onderdonk*); nest at Oak Lane, April 28 (*Harlow*).

Sphyrapicus varius, Yellow-bellied Sapsucker. Frankford, last seen May 1 (*Miller*).

Phlæotomus pileatus, Pileated Woodpecker. Several at Laanna, Pike Co., Apr. 13-20 (*Harlow*).

Colaptes auratus luteus, Flicker. Fairmount Park, Dec. 21, Wayne, Dec. 22 and Jan. 19 (*Redfield*); wintered at Tinicum, Edge Hill and Oak Lane (*Harlow*); wintered at Frankford (*Miller*).

Chordeiles virginianus, Nighthawk. Princeton, N. J., Sept. 30 and one Oct. 5, 1907 (*Rogers*).

Chaetura pelagica, Chimney Swift. Princeton, N. J., last seen Oct. 14, 1907 (*Rogers*).

Trochilus colubris, Hummingbird. Nest at Yardville, N. J., June 9, 1907, young were fledged and gone by June 22 (*Allinson*); Princeton, N. J., last seen Sept. 22, 1907 (*Rogers*).

Myiarchus crinitus, Great Crested Flycatcher. Eggs at Bustleton, May 15 (*Miller*); and at Oak Lane, June 5 (*Harlow*).

Sayornis phæbe, Phoebe. Princeton, N. J., last seen Oct. 22, 1907 (*Rogers*); young left nest at Pensauken, N. J., May 16,

second set in same nest June 13 (*Miller*); one at Edge Hill Dec. 25, 1907 (*Harlow*).

Empidonax virescens, Green-crested Flycatcher. Eggs May 29 at Bustleton in a "patched up" old Vireo's nest (*Miller*).

Otocoris alpestris, Horned Lark. Flock at George School, Nov. 9, 1907 (*Packer*), Cape May, N. J., March 14 (*Hand*); Wayne, Feb. 2 and 16 (*Pearson*).

Cyanocitta cristata, Blue Jay. Swarthmore, April 19 (*Roberts*); Haverford, April 25 (*Petry* and *Lewis*); Lansdowne, April 20, (*Pennock* and *Jacob*); Media, April 4 (*Allen*); Oak Lane, April 23 (*J. W. Allen*); Germantown, April 28 (*Justice*); Olney, April 21 (*Morris*); locally resident at Bristol, fifteen on March 1 (*Keim*); Wayne, March 14 (*Pearson*).

Corvus brachyrhynchos, Crow. Nest with eggs Glenside, March 30 (*Harlow*); six just hatched Pensauken, N. J., April 17, left nest about May 22 (*Miller*).

Corvus ossifragus, Fish Crow. Eggs, Bennett, N. J., May 10 (*Harlow*).

Sturnus vulgaris, European Starling. Five at Brown's Mills, N. J., April 12 (*Bartram*).

Dolichonyx oryzivorus, Bobolink. Still at Concordville, May 19 (*Styer*); several at Newtown, Bucks Co., May 30, (*Harlow*).

Euphagus carolinus, Rusty Grackle. Princeton, N. J., last seen Oct. 19, 1907, first April 4 (*Rogers*.)

Quiscalus quiscula, Purple Grackle. Princeton, N. J., last seen Oct. 22, 1907 (*Rogers*).

Carpodacus purpureus, Purple Finch. Haverford, April 14 (*Petry* and *Lewis*); Lansdowne, Jan 4-23 (*Pennock*); Oak Lane, April 12 (*Allen*); Kennett Square, April 26 (*Pennock*); Collegeville, March 23 (*Fox*); Wayne, Oct. 27-Dec. 27, 1907, arrived Apr. 4, 1908 (*Pearson*); Princeton, N. J., Sept. 26-Nov. 13, 1907 and Apr. 21-May 9 (*Rogers*); Frankford, Oct. 16-March 24 (*Miller*).

Loxia curvirostra americana, Crossbill. Six at Stafford Forge, N. J., May 17 (*Hill*).

Acanthis linaria, Redpoll. Near Trenton, N. J. Feb. 13-15 (*Abbott*); flock of nine at Frankford, March 9 (*Miller*).

Spinus pinus, Pine Siskin. Haverford, April 28-May 5

(*Petry and Lewis*); Easton, May 9 (*Marx*); Near Trenton, N. J., during February (*Abbott*); Swarthmore, ten on Feb. 23, one at Wayne, May 5 (*Redfield*).

Plectrophenax nivalis, Snowflake. Two shot from flock at Bridesburg in November (*Miller*).

Poæcetes gramineus, Vesper Sparrow. Princeton, N. J., last seen Nov. 11, 1907 (*Rogers*); one shot Edge Hill, Dec. 21, 1907 (*Harlow*).

Passerculus sandw. savanna, Savanna Sparrow. One shot at Tinicum, Feb. 29 (*Redfield*); Princeton, N. J., last seen, Oct. 31, 1907 (*Rogers*).

Coturniculus s. passerinus, Grasshopper Sparrow. Eggs, Newtown, May 30 (*Harlow*).

Ammodramus henslowii, Henslow's Sparrow. Bennett, N. J., May 23 (*Redfield*); Rio Grande, N. J., May 10 (*Harlow*); nest, Cape May, N. J., May 25 (*Harlower*).

Zonotrichia leucophrys, White-crowned Sparrow. Lansdowne, May 10, several (*A. J. Pennock*); Kennett Square, May 10 and 11 (*C. J. Pennock*); Collegeville, May 13 (*Fox*); Easton, May 16 (*Marx*); Concordville, May 11-18 (*Styer*); Valley Forge, May 9 (*Pearson*); Princeton, N. J., May 9 and 10 (*Rogers*); Frankford, May 12 and 14 (*Miller*); Valley Forge, May 9; Wayne, May 11 (*Redfield*).

Zonotrichia albicollis, White-throated Sparrow. Wayne, Sept. 30-May 16, several wintered (*Pearson*); Princeton, N. J., Oct. 3-31, a few wintered; last seen, May 13 (*Rogers*); Glenside, Sept. 18-May 25 (*Harlow*); Frankford, Sept. 19-May 21 (*Miller*); wintered at Haverford (*Petry and Lewis*); last seen at Lansdowne, May 11 (*Jacob*); Bryn Mawr, Sept. 30-May 13 (*Thomas*); Kennett Square, May 13 (*Pennock*); Bristol, May 14 (*Keim*); Concordville, May 17 (*Styer*); George School, April 23-May 10 (*Packer*); Ardmore, May 13 (*Baily*); Pensauken, N. J., May 8 (*Hunt*); Moorestown, N. J., Oct. 5, 1907-May 13 (*Mickle*); Princeton, N. J., Oct. 3-31, 1907, a few wintered; last seen in spring, May 13 (*Rogers*); two wintered at Frankford; last seen, May 21.

Spizella monticola, Tree Sparrow. Wayne, Oct. 12-March 27 (*Pearson and Redfield*); Princeton, N. J., Oct. 31-April 23

(*Rogers*); Frankford, Sept. 27–April 7 (*Miller*); Glenside, Oct. 5–April 21 (*Harlow*); Bristol, Oct. 27–March 21 (*Keim*); Easton, Nov. 16–March 25 (*Marx*); George School, Nov. 10–March 27 (*Packer*).

Spizella socialis, Chipping Sparrow. Princeton, N. J., last seen, Oct. 19, 1907 (*Rogers*).

Spizella pusilla, Field Sparrow. Princeton, N. J., last seen, Oct. 31, 1907; one, Feb. 2 (*Rogers*).

Junco hyemalis, Junco. Wayne, Oct. 5–May 5 (*Pearson*); Princeton, N. J., Oct. 12–April 26 (*Rogers*); Frankford, Oct. 2–April 29 (*Miller*); Glenside, Sept. 27–May 4 (*Harlow*); Moorestown, N. J., Oct. 5, 1907–April 23 (*Mickle*); last seen at Haverford, April 24 (*Petry* and *Lewis*); Oak Lane, April 23 (*Allen*); Bryn Mawr, Sept. 30–May 1 (*Thomas*); Kennett Square, April 23 (*Pennock*); Bristol, Oct. 27–April 5 (*Keim*); Easton, May 16 (*Marx*); Downstown, N. J., Oct. 19–April 24 (*Fair*); Bordentown, N. J., Sept. 28–April 17 (*Flynn*); Concordville, May 12 (*Styer*); Yardville, N. J., Oct. 10–April 14 (*Allinson*); Willow Grove, April 29 (*Miller*).

Melospiza c. melodia, Song Sparrow. Arrived at Lopez, March 13 (*Behr*).

Melospiza georgiana, Swamp Sparrow. Eggs at Bridesburg, May 19; young left nest, June 3 (*Miller*); eggs at Tinicum, May 22 (*Harlow*).

Passerella iliaca, Fox Sparrow. Princeton, N. J., Oct. 31–Nov. 13, 1907; March 13–25 (*Rogers*); Fairmount Park, one, Dec. 26, 1907; Delair, N. J., Dec. 25 (*Miller*); Edge Hill, Dec. 22, 1907 (*Harlow*).

Pipilo erythrophthalmus, Chewink. One wintered in the Wisahickon Valley, winter 1907–8 (*Day*); Princeton, N. J., Oct. 31, 1907 (*Rogers*).

Cardinalis cardinalis, Cardinal. Several pairs all winter at Haverford (*Petry* and *Lewis*) and at Media (*Palmer*); several all winter at Collegeville (*Fox*); eggs, Pensauken, N. J., April 17 (*Miller*); nest with eggs at Germantown, April 20 (*J. R. Pickering*); nest with eggs, George School, April 10 (*Packer*); Wayne, April 14 (*Redfield*); rare at Glenside, one seen March 14 (*Harlow*).

Zamelodia ludoviciana, Rose-breasted Grosbeak. Princeton, N. J., last seen, Sept. 22, 1907 (*Rogers*).

Piranga erythromelas, Scarlet Tanager. Princeton, N. J., last seen, Oct. 12, 1907 (*Rogers*).

Progne subis, Purple Martin. Eggs at Bennett, N. J., June 3 (*Harlow*).

Petrochelidon lunifrons, Cliff Swallow. Small colony at Edge Hill (*Harlow*).

Iridoprocne bicolor, Tree Swallow. Princeton, N. J., last seen, Oct. 19, 1907 (*Rogers*).

Lanius borealis, Northern Shrike. One at Frankford early in December, 1907 (*G. S. Morris*); Bristol, Jan. 1 (*Keim*); Princeton, N. J., Nov. 23 (*Rogers*).

Lanius lud. migrans, Migrant Shrike. One shot, Edge Hill, March 21 (*Harlow*).

Vireo olivaceus, Red-eyed Vireo. Eggs at Frankford, June 4 (*Miller*); Princeton, N. J., last seen, Sept. 30, 1907 (*Rogers*).

Vireo noveboracensis, White-eyed Vireo. Eggs, Maple Shade, N. J., May 21; young left nest Pensauken, N. J., June 14 (*Miller*).

Mniotilta varia, Black and White Warbler. Princeton, N. J., last seen, Sept. 30, 1907 (*Rogers*); common breeder at Bennett, N. J. (*Harlow*).

Helminthophila pinus, Blue-winged Warbler. Princeton, N. J., last seen, Sept. 22, 1907 (*Rogers*); eggs at Valley Falls, June 1 (*Miller*).

Helminthophila chrysoptera, Golden-winged Warbler. Media, May 3 (*Allen*); Kennett Square, May 10 (*C. J. Pennock*); Concordville, May 12 (*Styer*); Wayne, May 1 (*Pearson*); Wayne, May 5 (*Redfield*); Frankford, May 8 (*Miller*); Tinicum, May 5 (*Harlow*); Ardmore, May 12 (*Baily*).

Helminthophila rubricapilla, Nashville Warbler. Easton, May 2 (*Marx*); George School, March 8 (*Packer*); Wayne, May 2 (*Pearson*); Wayne, May 2 (*Redfield*).

Helminthophila peregrina, Tennessee Warbler. Lansdowne, May 13, one in full song (*Pennock*).

Compsothlypis americana usneæ, Parula Warbler. Princeton, N. J., last seen, Oct. 13, 1907, and May 19 (*Rogers*).

Dendroica tigrina, Cape May Warbler. Media, May 17 (*Allen*).

Dendroica coronata, Myrtle Warbler. Princeton, N. J., last seen Nov. 11, 1907 and May 11 (*Rogers*).

Dendroica caerulescens, Black-throated Blue Warbler. Princeton, N. J., last seen Sept. 26, 1907 and May 16 (*Rogers*).

Dendroica maculosa, Magnolia Warbler. Princeton, N. J., last seen Sept. 26, 1907 and May 19 (*Rogers*).

Dendroica castanea, Bay-breasted Warbler. Haverford, May 11 (*Petry* and *Lewis*); Lansdowne, May 14, 17 and 18 (*Pennock*); Bryn Mawr, May 11 (*Thomas*); Lansdowne, May 17, unusually abundant (*Carter*); George School, May 13, (*Packer*); Wayne, May 14 and 16 (*Pearson*), Frankford, May 8 (*Miller*); Ardmore, May 12 (*Baily*); Princeton, N. J., May 16 and 19 (*Rogers*).

Dendroica striata, Black-poll Warbler. Princeton, N. J., last seen Oct. 12, 1907 and May 29 (*Rogers*).

Dendroica blackburniae, Blackburnian Warbler. Princeton, N. J., last seen May 20 (*Rogers*).

Dendroica virens, Black-throated Green Warbler. Princeton, N. J., last seen Sept. 26, 1907, and May 16 (*Rogers*).

Dendroica vigorsii, Pine Warbler. Wayne, April 14, 18 and 19 (*Redfield*); Princeton, N. J., last seen April 22, unusually plentiful (*Rogers*).

Dendroica palm. hypochrysea, Yellow Palm Warbler. Princeton, N. J., last seen Oct. 15, 1907 and Apr. 24 (*Rogers*).

Seiurus noveboracensis, Short-billed Water Thrush. Princeton, N. J., last seen May 21 (*Rogers*).

Seiurus motacilla, Louisiana Water Thrush. On Wissahickon Creek, June 22, 29, July 1, 2, 3, one young bird on July 2, (*Pearson*); Princeton, N. J., May 9 (*Rogers*); Wissahickon, June 7, old and young (*Miller*).

Geothlypis agilis, Connecticut Warbler. Wayne, Oct. 5.

Geothlypis philadelphia, Mourning Warbler. Lansdowne, May 24 (*Carter*); Lopez, May 22 (*Behr*).

Geothlypis trichas, Maryland Yellowthroat. Princeton, N. J., last seen Oct. 13, 1907 (*Rogers*).

Wilsonia pusilla, Wilson's Warbler. Easton, May 16 (*Marrx*); Concordville, May 13 (*Styer*); Wayne, March 12, 14, 16 and 18 (*Pearson* and *Redfield*); Frankford, May 8 (*Miller*); Tinicum, May 5 (*Harlow*); Moorestown, N. J., May 13, several (*Mickle*);

Haverford, May 12 (*Petry and Lewis*); Lansdowne, May 17 (*Pennock*); Woodland Cemetery, May 14 and 18 (*Hill*); Stafford Forge, N. J., May 21 (*Hill*).

Wilsonia canadensis, Canadian Warbler. Princeton, N. J., last seen May 25 (*Rogers*).

Setophaga ruticilla, Redstart. Princeton, N. J., last seen September 30 (*Rogers*). Six pairs along Pennypack Creek, June 13, between Walnut Hill and Bustleton, nest at Vereesville, June 13 (*Miller*).

Anthus pensilvanicus, Titlark. Moorestown, N. J., one Nov. 11-Dec. 2, 1907 (*Mickle*); Haverford, April 24 (*Petry and Lewis*); Kennett Square, flock of thirty March 20 (*Pennock*); George School, March 11, May 5 (*Packer*); Princeton, N. J., last seen Oct. 31, 1907 and April 12 (*Rogers*); Bridesburg large flocks Oct. 3-Nov. 2, 1907, two on Feb. 26 (*Miller*); Edge Hill, Feb. 29-May 6, and Tinicum March 26-May 5 (*Harlow*); Wayne, March 8, 12, 13, 16 and 21 (*Pearson*).

Mimus polyglottos, Mockingbird. One seen at Cape May, N. J., April 21, 22, 24 (*Hand*).

Galeoscoptes carolinensis, Catbird. Princeton, N. J., last seen Oct. 12, 1907 (*Rogers*).

Toxostoma rufum, Brown Thrasher. Princeton, N. J. last seen Sept. 30, 1907 (*Rogers*).

Thryothorus ludovicianus, Carolina Wren. Several heard between Yardley and New Hope (*W. E. Roberts*); along Millstone River near Princeton, N. J., March 8-June, first occurrence nearer than Pennington (*Rogers*).

Nannus hiemalis, Winter Wren. Last seen at Haverford, April 26 (*Petry and Lewis*); Bryn Mawr, Sept. 17-April 17 (*Thomas*); Bristol, April 12 (*Keim*); Easton, Nov. 16-April 17 (*Marx*); George School, Oct. 5-April 20, (*Roberts*); one at Lopez in Jan. and Feb. (*Behr*); Wayne, Oct. 20-April 14 (*Pearson and Redfield*); Princeton, N. J., Oct. 13-March 5 only one wintered (*Rogers*); Glenside, Sept. 18-April 19, scarce in winter (*Harlow*); Frankford, Sept. 26-May 1, only one seen in winter (*Miller*).

Telmatodytes palustris. Eggs at Richmond, May 27, an albino set collected June 3, differed from those of *C. stellaris* in shape, color and texture of shell (*Miller*).

Certhia familiaris americana, Brown Creeper. Last seen at George School, Apr. 12 (*Packer*); Wayne, Oct. 13–April 17 (*Pearson*); Princeton, N. J., Sept. 26–Apr. 21 (*Rogers*); Frankford, Oct. 10–Dec. (*Miller*); Glenside, Oct. 5–April 21 (*Harlow*); first seen at Haverford, March 28 (*Petry and Lewis*); Bryn Mawr, Oct. 13–April 17 (*Thomas*); Bristol, Oct. 27–April 12 (*Keim*); Moorestown, N. J., Oct. 5, 1907 (*Mickle*).

Sitta canadensis, Red-breasted Nuthatch. Moorestown, N. J., May 2 and 5 (*Mickle*); Wayne, Oct. 5, 1907 (*Pearson*); Frankford, Oct. 14 and 16, 1907 and March 10 (*Miller*).

Parus atricapillus, Black-capped Chickadee. Bryn Mawr, Nov. 16–March 21 (*Thomas*); Easton, Nov. 16–April 3 (*Marx*); Wayne, Nov. 16–March 30 (*Pearson*); Glenside, Oct. 25–April 5 (*Harlow*).

Regulus satrapa, Golden-crowned Kinglet. Last seen at Haverford, April 21 (*Petay and Lewis*); Media, April 5 (*Palmer*); Oak Lane, April 5 (*Allen*); Bryn Mawr, Oct. 1–April 17 (*Thomas*); Bristol, April 17 (*Keim*); Easton, Oct. 9–April 21 (*Marx*); George School, April 12 (*Packer*); Wayne, Oct. 5–April 19 (*Pearson*); Princeton, N. J., Oct. 5–April 14 (*Rogers*); Frankford, Oct. 1–April (*Miller*); last at Glenside, April 24, (*Harlow*).

Regulus calendula, Ruby-crowned Kinglet. One carefully identified was seen at Easton, Jan. 17, again March 7 and on March 12, 14 and 21 (*Marx*); Princeton, N. J., Oct. 5–22, 1907 (*Rogers*).

Polioptila caerulea, Blue-Gray Gnatcatcher. Wayne, one shot April 18 (*Pearson*); another May 2 (*Redfield*).

Hylocichla g. pallasi, Hermit Thrush. Princeton, N. J., last seen Oct. 15, 1907 (*Rogers*); Edge Hill, Dec. 1, 1907 (*Harlow*).

Hylocichla u. swainsoni, Olive-backed Thrush. Princeton, N. J., last seen Oct. 6, 1907 (*Rogers*).

City Ornithology

Mary S. Allen furnishes the following list of birds observed in the Friends' Western Burial Ground, Sixteenth and Race Streets, Philadelphia.

1907. Flicker, Sept. 13, 14, 20 and 21 ; Brown Thrasher, Sept. 21.

1908. Flicker, May 26 ; Song Sparrow, March 12, and May 15 ; Chewink, April 28, and May 8 ; White-throated Sparrow, April 28 ; Ovenbird, May 8 ; Black-poll Warbler, May 23 and 27 ; Brown Creeper, May 1 ; Robin, March 27 and all season.

Mr. and Mrs. Thos. R. Hill observed the following species in Woodland Cemetery, W. Phila. Sparrow Hawk, resident; Crow resident ; Flicker, March 22 ; Crested Flycatcher, May 14 ; Phoebe, March 30 ; Wood Pewee, May 3 ; Least Flycatcher, May 10 ; Red-winged Blackbird, March 22 ; Purple Grackle, March 22 ; Song Sparrow resident ; Chipping Sparrow, March 22 ; Field Sparrow, March 27 ; White-throated Sparrow, April 22 ; Chewink, March 27 ; Cardinal, March 30 ; Black and White Warbler, April 25 ; Parula Warbler, April 27 ; Wilson's Warbler, May 14 ; Myrtle Warbler, April 25 ; Magnolia Warbler, May 18 ; Pine Warbler, March 30 ; Yellow Palm Warbler, April 23 ; Prairie Warbler, April 25 ; Ovenbird, April 26 ; Maryland Yellowthroat, April 28 ; Redstart, April 28 ; Catbird, April 28 ; Brown Thrasher, April 22 ; House Wren, April 27 ; Brown Creeper, March 30 ; Golden-crowned Kinglet, March 27 ; Ruby-crowned Kinglet, April 21 ; Wood Thrush, May 3 ; Wilson's Thrush, May 5 ; Hermit Thrush, April 22 ; Robin, March 22.

Mr. Witmer Stone observed the following species during the Autumn of 1908, in Black Oak Park, Fifty-second and Pine

Streets, which occupies one city block, built up solidly on all four sides.

Screech Owl, Flicker, Red-headed Woodpecker (nested), Yellow-bellied Sapsucker, Downy Woodpecker, Phoebe, Crow, Purple Grackle, White-throated Sparrow, Junco, Gold-finch, Pine Finch, Chewink, Red-eyed Vireo, Redstart, Magnolia Warbler, Black-poll Warbler, Black and White Warbler, Maryland Yellow-throat, Carolina Wren, Winter Wren, House Wren, Brown Creeper, White-breasted Nuthatch, Hermit Thrush, Robin.

Abstract of the Proceedings of the Delaware Valley Ornithological Club, 1908

January 2, 1908. Annual Meeting. Thirty-three members present. The following officers were elected for the ensuing year: President, William A. Shryock; Vice-President, Stewardson Brown; Secretary, Chreswell J. Hunt; Treasurer, Samuel Wright.

Dr. Trotter read a paper entitled "The Ornithological Background."* Several Christmas day lists were read and some of the early days of the Club's history were discussed. A collation followed.

January 16, 1908. Twenty-one members present. Mr. Harlow read a paper on "The Fall Warblers," discussing the relative abundance and time of occurrence of the various species.

February 6, 1908. Twenty-one members present. Mr. Stone read a report on the Spring Migration of 1907 (see *Cassinia*, 1907, pp. 54-79). Starlings, *Sturnus vulgaris*, were reported from Vincenttown and Tuckerton, N. J. (*Auk*, 1908, p. 221).

February 20, 1908. Twenty-five members present. John D. Carter, under the title of "Marsh Nesting," described a trip to Stone Harbor, N. J., during May, 1907 in company with William B. Evans. The colony of Laughing Gulls was estimated at over 500, possibly 1000 birds. The speaker also described trips to the Tinicum meadows on the Delaware where he found the King Rail nesting.

March 5, 1908. Nineteen members present. This being the spring meeting for the election of members, the candidates were

* Bird Lore.

discussed and election held with the following results; Thomas D. Keim, Richard C. Harlow and Cornelius Weygandt were chosen Active Members and William S. Essick, Richard F. Miller, Alfred C. Redfield, Leonard S. Pearson and George Abbott, Jr., Associates; Arthur C. Emlen was transferred to the associate class.

Mr. Street described the "Spring Bird Life of Rancocas Creek." He divided the stream into three sections: the tide-water marshes reaching up to Mt. Holly; the intermediate area from there to Pemberton; the pine-barren section to Brown's Mills; and commented upon the characteristic birds of each.

Mr. Hunt followed with some "Notes on the Birds of Northwestern Chester Co., Pa."

March 19, 1908. Twenty-five members present. The resignation of Mr. Douglas Macfarlan was accepted with regret.

Mr. Brown spoke on "Some Birds of Bermuda," describing a trip during February of the present year. Discussion followed upon the relationship of Bermuda birds. Species seen were the Cardinal, Catbird or "Blackbird" of the natives, Bluebird, White-eyed Vireo, Ground Dove, European Gold-finch, Sharp-shinned Hawk, Screech Owl, Bobwhite, Great Blue Heron, Killdeer, Tropic Bird and Crow.

Mr. Rehn exhibited a copy of Rothschild's "Extinct Birds" from the Academy Library and discussed specimens of extinct species in the Academy's collection. Mr. Harlow read a letter from Mr. R. B. Simpson reporting a Glaucous Gull (*Larus glaucus*) seen at Erie, Pa.

April 2, 1908. Twenty-one members present. Mr. S. N. Rhoads discussed the subject of "Birds as Weed Destroyers." His conclusions based on a practical experience in farming were that seed-eating birds were not as important a factor in the destruction of weeds as the Bulletins of the U. S. Department of Agriculture would have us believe. The production of weed seed is so enormous that the amount eaten by birds was considered to be really a negligible quantity in a discussion of the

weed problem. Furthermore, birds confine their feeding chiefly to uncultivated ground and neglected corners of the farm. Mr. Rhoads was glad that there were weeds to furnish food for our winter birds.

April 16, 1908. Nineteen members present. Dr. Trotter addressed the Club on "Brain and Organs in Birds" illustrating his remarks with diagrams.

Mr. Stone exhibited several specimens of parrots apparently referred to different genera on account of slight differences in bill contour and called attention to the striking similarity of coloration. He considered that color-pattern was in such cases an older character than bill contour and that by giving slight structural difference so much weight as generic characters, we often misrepresented the phylogeny of a group.

Mr. Morris described a canoe trip down the Egg Harbor River, March 25-26. He noted great numbers of Red-breasted Nuthatches (*Sitta canadensis*) and one Pileated Woodpecker (*Phlæotomus pileatus abieticola*).

May 7, 1908. Twenty-two members present. Mr. Harlow described the nesting of the Duck Hawk (*Falco peregrinus anatum*) on the Nockamixon Cliffs on the Delaware river in Bucks Co., Pa., and his successful efforts to secure a set of eggs. The latter were deposited upon a bare shelf of rock with no vestige of a nest. Mr. Harlow was of the opinion that this species nested also on the Tammany Cliff, at the Delaware Water Gap, and Mr. Rhoads stated that he had seen the birds about the Gap on three different occasions. Mr. Harrower described several trips to Clementon, N. J. He saw a Hooded Warbler there on May 23 and a Redstart on June 9. Mr. Rhoads reported House Wrens as absent from Haddonfield this spring. This was the last meeting held in the old Ornithological room of the Academy, which is to be partially destroyed in the projected alterations to the building.

May 21, 1908. Thirty-two members present. Mr. Bailly described a June trip to Mt. Pocono, Pa., illustrating his remarks with a series of beautiful lantern slides. He found nests of the

Black-and-White and Nashville Warblers, White-throated Sparrow and Hermit Thrush.

Mr. Harlow called attention to the variation in the markings of hawks' eggs. He was of the opinion that as the bird advanced in age its eggs became more heavily blotched.

Mr. Carter spoke of the unusual abundance of Bay-breasted Warbler during the present spring. Meeting held in the Academy Library.

October 1, 1908. Twenty-three members present. Mr. Stone announced that until the alterations to the building were completed the meetings would be held in the room of the Microscopical Section.

Mr. Brown described the birds seen by him during the summer on an extended trip from Laggan to the Saskatchewan and Athabaska rivers in British Columbia. As botany was his main object bird-observations were merely incidental.

October 15, 1908. Fifteen members present. Mr. Spaeth made an interesting communication on "Birds Observed in Wyoming" during a summer spent at Gillette, Crook Co.

A letter from Mr. Otto Behr, of Lopez, Sullivan Co., Pa., described the calling of the Black-billed Cuckoo (*Coccyzus erythrophthalmus*) after dark as it flew about overhead.

November 5, 1908. Twenty-five members present. This being the autumn election meeting, the following were chosen Associate Members, Thomas R. Hill, Edwin B. Bartram and Robert T. Moore.

Messrs S. N. Rhoads and J. D. Carter described the bird life of Raquette Lake in the Adirondacks where each had spent a portion of the summer, their trips following one another so as to be in a measure supplementary. The Rusty Blackbird, Olive-sided Flycatcher, Olive-backed Thrush, American Three-toed Woodpecker, Raven and Lincoln's Finch, were the most interesting species noted.

November 19, 1908. Eighteen members present. William B.

Evans was upon request transferred to Associate Membership having removed to Westtown, Pa.

Mr. Hunt described the "Bird Life of the Lower Maurice River, N. J." (see *antea* pp. 14-19).

December 3, 1908. Twenty members present. Thomas D. Keim was upon request transferred to Corresponding Membership, having removed to New York City.

Mr. Pennock read a paper entitled "Further Notes from Delaware." A Blue Grosbeak (*Guiraca caerulea*) obtained May 16, at Rehoboth and a flock of American Crossbills (*Loxia c. americana*) seen May 18, 1908 at the same place were the most interesting records.

Mr. Stone followed with an account of the recent meeting of the American Ornithologists' Union, at Cambridge, Mass., which he had attended.

December 17, 1908. Fourteen members present. Mr. Morris read a paper entitled "Modern Ornithologists" in which he reviewed the lives and work of the more prominent American Ornithologists from Prof. Baird to the present day.

Bibliography for 1908

I. Papers Relating to the Birds of Pennsylvania, New Jersey and Delaware.

- BISHOP, H. E. [Late nesting of Yellow-billed Cuckoo; young hatched, Sept. 13.] *Oologist*, Oct., 1908, p. 156.
- BISHOP, L. B. The most Southern Starling Record. *Bird Lore*, March-April, 1908, p. 81. Tacony, Phila., Dec. 9, 1907.
- BROWN, CLARENCE. A Winter Rose-breasted Grosbeak. *Bird Lore*, March-April, 1908, p. 82. At Rutherford, N. J., Jan. 26-Feb. 13.
- BURNS, F. L. Loon (*Gavia imber*), near Berwyn, Chester County, Pa. *Wilson Bulletin*, Dec., 1908, p. 215. Two taken on a small dam on Chesterbrook Farm, Nov. 14, 1908, during a snow storm.
- CAMPBELL, E. W. [Young Solitary Sandpiper, in down, from north of Pittston, Pa.] *Oologist*, 1908, p. 121.
- CAMPBELL, E. W. Winter Wren. *Oologist*, June, 1908, p. 92. Nest at Mahoopany, Wyoming Co., Pa., May 23, 1908.
- CAMPBELL, E. W. Carolina Chickadee in Pennsylvania. *Oologist*, Oct., 1908, p. 156.
- CLARKE, W. G. A Family of Great Owls. *Bird Lore*, May-June, 1908, pp. 99-102. Barred Owls at Schraalenburgh, N. J.
- DARLINGTON, E. J. Great Blue Heron. *Oologist*, April, 1908, p. 54. Seventeen sets of eggs from Delaware.
- DEWITT, EDMUND. A Purple Martin's House. [Lawrenceville, N. J.] *Forest and Stream*, April 4, 1908, p. 532.
- HARLOW, RICHARD C. Nesting of the Broad-winged Hawk in Delaware County, Pa. *Oologist*, Aug., 1908, p. 117.
- HARLOW, RICHARD C. Nesting of the Tufted Tit in Pennsylvania. *Oologist*, March, 1908, p. 42.

- HARLOW, RICHARD C. Breeding of the Loon in Pennsylvania. *Auk*, Oct., 1908, p. 471. Found by C. Homan on a lake near Bushkill, Monroe County, May, 1908.
- HARLOW, RICHARD C. Bobolinks Summering in Southern Pennsylvania. *Auk*, April, 1908, p. 222.
- HARLOW, RICHARD C. Recent Notes on Birds of Eastern Pennsylvania. *Auk*, July, 1908, pp. 276-282. Notes on 33 species.
- HARLOW, RICHARD C. Virginia Rail and Kentucky Warbler in New Jersey. *Auk*, April, 1908, p. 218. Kentucky Warbler at Manahawken, July 3, 1904, and May 21, 1907.
- HILL, THOS. R. A Southern Starling Record. *Bird Lore*, May-June, 1908, p. 130. W. Philadelphia.
- HORSFALL, BRUCE. Migration of Hawks. *Auk*, Oct., 1908, p. 474. At Delaware Water Gap.
- HOWE, REGINALD HEBER, JR. *Ardea egretta* in New Jersey. *Auk*, Oct., 1908, p. 473. One shot, July 6, 1908, at Black Point, Monmouth County, by R. B. Romaine.
- HUNT, C. J. The Kentucky Warbler in Southern New Jersey. *Auk*, Jan., 1908, p. 87.
- HUNT, C. J. The Tree Swallow Nesting in the Delaware Valley. *Auk*, Jan., 1908, p. 85.
- HUNT, C. J. *Callus virginianus* a Delaware Valley Breeder. *Auk*, Jan., 1908, p. 81.
- LEIBELSPERGER, W. H. Some Rare Summer Residents of Berks County, Pennsylvania. *Auk*, April, 1908, p. 232.
- MILLER, RICHARD F. Nesting of the Short-billed Marsh Wren in Philadelphia, Pa. *Auk*, July, 1908, p. 320. Nest with white eggs recorded; birds not secured.
- MILLER, RICHARD F. The Henslow's Sparrow in Philadelphia County, Penna. *Oologist*, Dec., 1908, p. 183. One shot, Oct. 6, 1908; other records very questionable.
- MILLER, RICHARD F. Large set of Florida *Gallinula*. *Oologist*, November, 1908, p. 170. [18 eggs.]
- MILLER, RICHARD F. The Lesser Yellowlegs in Philadelphia County, Pa. *Auk*, April, 1908, p. 220.
- MILLER, RICHARD F. Nesting of the Coot in Philadelphia

- County, Pa. *Auk*, April, 1908, p. 219. Not a conclusive record.
- MILLER, RICHARD F. The Black Tern at Camden, N. J., and Philadelphia, Pa. *Auk*, April, 1908, p. 215.
- MILLER, RICHARD F. Nesting of the Virginia Rail in Philadelphia County, Pa. *Auk*, 1908, p. 219.
- MILLER, RICHARD F. Nesting of the King Rail in Philadelphia Co., Pa. *Auk*, April, 1908, p. 218.
- OCEAN. Black Ducks Breeding in New Jersey. *Forest and Stream*, Oct. 24, 1908, p. 652. Several pairs probably bred on Barnegat Bay Meadows in 1908.
- OLDYS, HENRY. Capture of a Tagged Canvasback Duck. *Auk*, Jan., 1908, p. 80. At Manahawken Bay, N. J., tagged T. J. O. D. 48.
- PEARSON, LEONARD S. The Bluegray-Gnatcatcher in Southeastern Pennsylvania. *Auk*, Oct., 1908, p. 481. Summary of former records, and two killed at Wayne, Pa., April 18 and May 2, 1908.
- PENNOCK, C. J. White-crowned Sparrows unusually abundant in Eastern Pennsylvania. *Auk*, July, 1908, p. 319.
- PENNOCK, C. J. Red Crossbills, and some other birds in Lower Delaware. *Auk*, July, 1908, p. 318.
- PENNOCK, C. J. Birds of Delaware—Additional Notes. *Auk*, July, 1908, 282-288.
- PENNOCK, C. J. *Rallus virginianus* Breeding in the Delaware Valley. *Auk*, 1908, p. 219.
- PITCAIRN, WM. G. Lark Sparrow (*Chondestes grammacus*) in Southwestern Pennsylvania. *Auk*, Oct., 1908, p. 476, with Vesper Sparrows at Leetsdale, Pa.
- SHARPLES, R. P. The Mourning Warbler. *Oologist*, Aug., 1908, p. 121, nesting in Warren Co., Pa.
- SHARPLES, R. P. Chimney Swifts Nesting in Hollow Trees. *Oologist*, Aug. 1908, p. 120.
- STONE, WITMER. Methods of Recording and Utilizing Bird-Migration Data. *Proc. Acad. Nat. Sci. Phila.*, 1908, pp. 128-156.
- STONE, WITMER. European Starlings (*Sturnus vulgaris*) in Pennsylvania, New Jersey and Delaware. *Auk*, April, 1908, p. 221.

- STONE, WITMER. The Life Areas of Southern New Jersey. *Proc. Acad. Nat. Sci. Phila.*, 1908, pp. 452-459.
- SURFACE, H. A. Bird Preservation. Report of Ornithologist Zool. Bull. Penna. Dept. Agr. V, No. 10, Feb. 1, 1908.
- VON LINGERKE, J. Migration of Hawks. *Auk*, July, 1908, p. 315, at Stagg Lake, Sussex Co., N. J.
- WOODRUFF, E. SEYMOUR. Another Capture of a Tagged Duck. *Auk*, April, 1908, p. 216. Redhead shot at Beach Haven, N. J., tagged T. J. O. D. 49.
- Thirty-one Christmas Bird Lists from Penna., N. J. and Del., *Bird Lore*, Jan.-Feb., 1908, pp. 29-33.

II. Other Ornithological Papers by Members of the Club.

- HARLOW, RICHARD C. The Crested Flycatcher on Strange Grounds. *Oologist*. Jan., 1908, p. 12, nest in a water spout.
- MILLER, RICHARD F. A White-eyed Vireo's Peculiar Method of Feeding. *Oologist*, Oct., 1908, p. 153.
- MILLER, R. F. Anent the Cardinal. *Oologist*, Aug., 1908, p. 120.
- MILLER, R. F. Four sets of eggs from one bird nest. *Oologist*, Aug., 1908, p. 119. [Wood Thrush].
- SHARPLES, R. P. Natures Remedies, *Bird Lore*. Mar.-Apr. 1908, p. 83. [Screech Owls eating English Sparrows].
- SHARPLES, R. P. Trustful Birds. *Bird Lore*, Mar.-Apr., 1908, p. 80.
- STONE, WITMER. Correction. *Wilson's Bulletin*. Sept., 1908, 154 [to Burns' Article on Wilson].
- STONE, WITMER. *Glaucidium* vs. *Noctua*. A Correction. *Auk*, April, 1908, p. 221.
- TROTTER, SPENCER. The Background of Ornithology. *Bird Lore*, Mar.-Apr., 1908, pp. 68-71.

Bird Club Notes

THE Club held sixteen meetings during the year, in which fifty-six members participated. The average attendance was twenty-two.

* * *

Messrs. Rhoads, Pennock and Stone represented the Club at the meeting of the American Ornithologists' Union at Cambridge, Mass., November 16-19. W. E. Clyde Todd of our Correspondents was also present, and presented a paper, "Bird Studies in Northern Ontario."

* * *

During the past year William B. Evans has been appointed Instructor in Natural History at Westtown Boarding School; Thomas D. Keim has removed permanently to New York City and Richard C. Harlow has been attending college at the State Institution at Bellefonte; so that the Club loses three valuable members. Herbert L. Coggins is still at Fresno, California.

* *

The Club was as usual widely scattered during the summer, Shryock was in Europe and Brown exploring unknown lakes in the British Columbian Rockies; Rehn took a flying trip to North Carolina; Carter and Rhoads were in the Adirondacks, Dr. Hughes in Montana and Dr. Trotter in Nova Scotia.

* * *

Three Club outings were attempted during the year. On February 22 thirteen members with Mr. J. Fletcher Street as guide explored the country about Sweed's Run and Mill Creek, Burlington, Co., N. J.

On May 30 Mr. W. L. Baily invited the Club to spend the day at his home in Ardmore. Elaborate plans were made to organize two parties to tramp across country to Ardmore, one

starting from Lansdowne on the south and the other coming up Mill Creek from the northeast. Unfortunately a downpour of rain which lasted all day seriously interfered with the plan and only seven members were present to enjoy Mr. Baily's hospitality.

In December, Messrs. Hunt and Griffiths offered the hospitality of their Cabin on the Pensauken Creek, N. J., but inclement weather again interfered with the trip.

OFFICERS AND MEMBERS

OF THE

Delaware Valley Ornithological Club.

1909.

WILLIAM A. SHRYOCK, *President*.
 STEWARDSON BROWN, *Vice-President*.
 CHRESWELL J. HUNT, *Secretary*, 225 N. Fifty-third St., Phila.
 SAMUEL WRIGHT, *Treasurer*, Conshohocken, Pa.

ACTIVE MEMBERS.

WILLIAM L. BAILY, Ardmore, Pa.	Founder.
STEWARDSON BROWN, 20 E. Penn St., Germantown, Phila.	*1891
JOHN D. CARTER, Lansdowne, Delaware Co., Pa.	1900
HERBERT L. COGGINS, 5025 McKean Ave., Germantown, Phila.	1897
I. NORRIS DE HAVEN, Ardmore, Pa.	1891
HENRY W. FOWLER, Holmesburg, Phila.	1894
RICHARD C. HARLOW, Edge Hill, Pa.	1904
WILLIAM E. HUGHES, M. D., 3945 Chestnut St., W. Phila.	1891
CHRESWELL J. HUNT, 225 N. Fifty-third St., W. Phila.	1902
THOMAS D. KEIM, 405 Radcliffe St., Bristol, Pa.	1902
GEORGE SPENCER MORRIS, Olney, Phila.	Founder.
CHARLES J. PENNOCK, Kennett Square, Pa.	1895
JAMES A. G. REHN, 5141 Locust St., Phila.	1899
SAMUEL N. RHODS, Haddonfield, N. J.	Founder.
WILLIAM A. SHRYOCK, 209 S. Sixth St., Phila.	1891
WITMER STONE, Academy Nat. Sciences, Phila.	Founder.
SPENCER TROTTER, M. D., Swarthmore College, Delaware Co., Pa.	Founder.
CORNELIUS WEGGANDT, Ph. D., Wissahickon Ave. below Frank St., Germantown, Phila.	1891
SAMUEL WRIGHT, Conshohocken, Pa.	1892

*Date indicates year of election to Club.

ASSOCIATE MEMBERS.

GEORGE ABBOTT, JR., Riverton, N. J.	1908
J. HAROLD AUSTIN, Lansdowne, Delaware Co., Pa.	1903
EDWIN B. BARTRAM, Wayne, Pa.	1908
PAUL C. BREWER, 261 W. Rittenhouse St., Germantown	1906
ERNEST A. BUTLER, 3305 N. 17th St., Phila.	1906
JOHN E. CHAMBERLIN, 201 West End Trust Building, Phila.	1904
STIRLING W. COLE, 116 N. Sixth St., Camden, N. J.	1904
FRANCIS R. COPE, JR., Awbury, Germantown, Phila.	1895
ARTHUR C. EMLEN, Awbury, Germantown, Pa.	1897
WM. S. ESSICK, 536 Penn St., Reading, Pa.	1908
ERNEST M. EVANS, Awbury, Germantown, Phila.	1899
WILLIAM B. EVANS, Westtown, Pa.	1898
GEORGE FORSYTH, West Chester (Route 4), Chester Co., Pa.	1891
BARTRAM W. GRIFFITHS, 4024 Green St., W. Phila.	1902
REV. JOHN H. HACKENBERG, 4231 Paul St., Frankford, Phila.	1903
ARTHUR F. HAGAR, 626 Westview Ave., Germantown, Phila.	1906
SAMUEL S. HAINES, M. D., 124 E. Main St., Moorestown, N. J.	1901
THOS. R. HILL, 47th St. and Baltimore Ave., Phila.	1908
DAVID E. HARROWER, Swarthmore, Pa.	1905
KENNETH HOWIE, 48 Sedgewick Ave., Germantown, Phila.	1904
CHARLES JACK, M. D., Media, Pa.	1906
WILLIAM JOHNS, 1548 N. 61st St., Phila.	1905
WILLIAM W. JUSTICE, JR., Clapier St. & Wissahickon Ave., Germantown, Phila.	1893
RAYMOND KESTER, 1514 Chestnut St., Phila.	1892
NATHAN KITE, Moylan, Delaware Co., Pa.	1898
M. ALBERT LINTON, Haverford College, Pa.	1905
JOSEPH B. LODGE, 3340 N. Sixteenth St., Phila.	1900
PAUL L. LORILLIERE, Collingdale, Del. Co., Pa.	1904
DAVID N. MCCADDEN, 4204 Powelton Ave., W. Phila.	1892
RICHARD C. MCMURTRIE, Fort Washington, Pa.	1904
F. GUY MEYERS, 1110 S. Forty-seventh St., W. Phila.	1897
ISAAC P. MILLER, 409 Chestnut St., Phila.	1907
RICHARD F. MILLER, 2073 E. Tioga St., Phila.	1908
ROBERT T. MOORE, Haddonfield, N. J.	1908
WAYNE B. MORRELL, 5525 Jefferson St., Phila.	1905
ELMER ONDERDONK, 4309 Wyalusing Ave., Phila.	1903
LEONARD S. PEARSON, Wayne, Pa.	1908
JAMES F. PRENDERGAST, M. D., 4012 Chestnut St., W. Phila.	1899
FRANCIS W. RAWLE, 211 S. Sixth St., Phila.	1907
ALFRED C. REDFIELD, Wayne, Pa.	1908
CHARLES J. RHOADS, Bryn Mawr, Pa.	1890
GEORGE C. ROBERTS, Box 196, Sharon Hill, Pa.	1906
WILLIAM E. ROBERTS, George School, Bucks Co., Pa.	1901

ANTHONY W. ROBINSON, 409 Chestnut St., Phila.	1898
WILLIAM B. SCHEUING, 317 N. 63d St., Phila.	1893
SAMUEL C. SCOVILLE, Penna. Bldg., 15th & Chestnut Sts., Phila.	1907
C. FEW SEISS, 1338 Spring Garden St., Phila.	1892
EDWARD A. SELLIEZ, 1317 N. Nineteenth St., Phila.	1902
WILLIAM J. SERRILL, Haverford, Pa.	1891
WALTER G. SIBLEY, 6626 McCallum St., Germantown, Phila.	1900
L. I. SMITH, JR., 3908 Chestnut St., W. Phila.	1901
WALTER GORDON SMITH, 5870 Drexel Road, W. Phila.	1898
REYNOLD A. SPAETH, Haverford College, Pa.	1901
JOHN H. STEELE, 4008 Spruce St., W. Phila., Phila.	1903
WILLIAM M. STRANG, 277½ Chestnut St., Camden, N. J.	1907
J. FLETCHER STREET, Beverly, N. J.	1903
NORMAN W. SWAYNE, Friends' Academy, Locust Valley, N. Y.	1906
JOSEPH W. TATUM, 5220 Parkside Ave., W. Phila.	1892
WILLIAM H. TROTTER, Chestnut Hill, Phila.	1899
HENRY TUCKER, M. D., 2000 Pine St., Phila.	1906
CHARLES A. VOELKER, Aldan, Delaware Co., Pa.	Founder.
PAUL VOSBERG, 1539 N. Allison St., Phila.	1905
CHARLES S. WELLES, Elwyn, Delaware Co., Pa.	1900
A. L. WHEELER, Bryn Mawr, Pa.	1905
ALBERT L. WHITAKER, Cedar Grove, Frankford, Phila.	1896
JAMES L. WHITAKER, Cedar Grove, Frankford, Phila.	1904
WALTER R. WHITE, Lansdowne, Delaware Co., Pa.	1903
EDWARD W. WOOLMAN, 44 N. Thirty-eighth St., W. Phila.	1902

CORRESPONDING MEMBERS.

CHARLES H. BAKER, Verona, Alleghany Co., Pa.	1900
THOMAS J. BEANS, Moorestown, N. J.	1895
HERMAN BEHR, Jennings, Md.	1897
OTTO BEHR, Lopez, Sullivan Co., Pa.	1897
W. H. BULLER, Marietta, Lancaster Co., Pa.	1895
CHARLES BUVINGER, M. D., Newark, N. J.	1900
WILLIAM J. CRESSON, Box 249, Pittsburg, Pa.	1899
THOMAS C. DESMOND, Cambridge, Mass.	1905
LIEUT. FRANK B. EASTMAN, U. S. A., Presidio, San Francisco, Cal.	1898
MARCUS S. FARR, Princeton, N. J.	1901
ALFRED M. GITHENS, New York City.	1895
HARRY L. GRAHAM, Redlands, Cal.	1897
ALLEN H. GROSH, York, York Co., Pa.	1900
HENRY HALES, Ridgewood, N. J.	1895
H. WALKER HAND, 1002 Washington St., Cape May, N. J.	1900
WM. E. HANNUM, Lynn, Mass.	1901
THOMAS H. JACKSON, West Chester, Pa.	1895

J. WARREN JACOBS, Waynesburg, Greene Co., Pa.	1895
SAMUEL B. LADD, West Chester, Pa.	1895
WALDRON DE W. MILLER, Plainfield, N. J.	1900
SAMUEL C. PALMER, Cambridge, Mass.	1899
HOWARD Y. PENNELL, M. D., Downingtown, Pa.	1894
A. H. PHILLIPS, Princeton, N. J.	1895
M. W. RAUB, M. D., Lancaster, Pa.	1895
H. JUSTIN RODDY, State Normal School, Millersville, Lanc. Co., Pa.	1895
CHAS. H. ROGERS, 39 Univ. Place, Princeton, N. J.	1905
ROBERT P. SHARPLES, West Chester, Pa.	1906
R. B. SIMPSON, Warren, Warren Co., Pa.	1907
FREDERICK SÖRENSEN, Chalmersgarten, Göthenburg, Sweden	1900
FREDERICK W. STACK, Doubleday Page and Co., N. Y. City.	1905
HUGH E. STONE, Coatesville, Pa.	1895
H. A. SURFACE, Harrisburg, Pa.	1900
C. F. SYLVESTER, Princeton, N. J.	1901
W. E. CLYDE TODD, Carnegie Museum, Pittsburg, Pa.	1895
HENRY WARRINGTON, San Francisco, Cal.	1896
ASA P. WAY, Bridgeton, N. J.	1902
WILLIAM H. WERNER, Atlantic City, N. J.	1901
WILLIAM L. WHITAKER, Ada, Okla.	1893
J. JAY WISLER, Columbia, Pa.	1904
ROBERT T. YOUNG, State University, N. Dakota	1892

DECEASED MEMBERS.

Died.

JOHN FARNUM BROWN, Active member	May 13, 1894
WALTER D. BUSH, Corresponding member	August 11, 1904
JOHN W. DETWILLER, M. D., Corresponding member	September 26, 1898
LARUE K. HOLMES, Corresponding member	May 10, 1906
JOSIAH HOOPES, Corresponding member	January 16, 1904
AUGUST KOCH, Corresponding member	February 15, 1907
GILBERT H. MOORE, Associate member	May 28, 1899
FREDERICK N. OWEN, Associate member	December 27, 1905
WILLIAM PATTERSON, Corresponding member	August 27, 1900
EDWIN SHEPPARD, Associate member	April 7, 1904
WILLIAM W. SMITH, Associate member	July 3, 1892
SAMUEL W. WOODHOUSE, M. D., Honorary member	October 23, 1904

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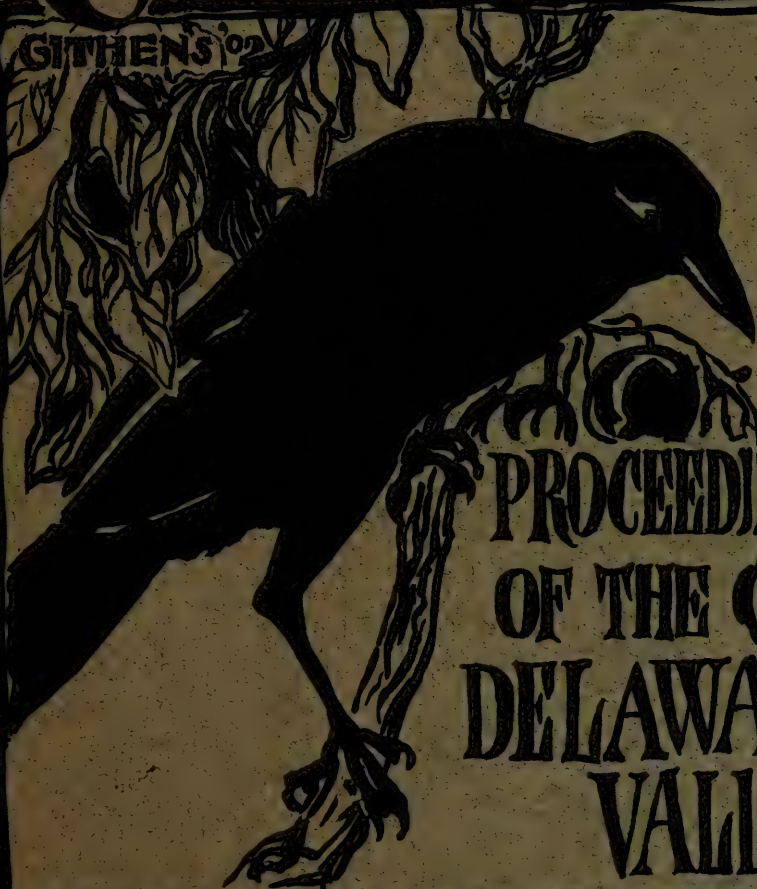
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CASSINIA A BIRD ANNUAL

GITHENS '02



PROCEEDINGS
OF THE
DELAWARE
VALLEY

ORNITHOLOGICAL CLUB
OF PHILADELPHIA

1909

CASSINIA

An Annual Devoted to the Ornithology of
Pennsylvania, New Jersey, and Delaware.

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PUBLICATIONS OF THE D. V. O. C.

- The Birds of Eastern Pennsylvania and New Jersey, by Witmer Stone, pp. 176 with two maps and portrait of Alex. Wilson. One Dollar and a-half. (Post paid \$1.62)
- Abstract of Proceedings, Full Set Nos. I-IV. (1890-1900) pp. 98, Fifty cents
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Thomas B. Wilson

CASSINIA

PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB

No. XIII.

PHILADELPHIA, PA.

1909.

Thomas B. Wilson, M. D.

BY WITMER STONE

It is an open question whether the patron who endows scientific institutions or the investigator who carries out the scientific work is deserving of the greater credit.*

In every generation we find men of each class working together for the advancement of human knowledge.

In proportion to the standards of his time, science in America has had few if any more liberal patrons than Thomas B. Wilson, but so modest was he that few outside of his native city know anything of him to-day and probably no one ever knew the full extent of his gifts for the advancement of science.

Dr. Wilson was, however, not merely a patron. He was a close student of nature in its broadest sense and his knowledge in several branches was equaled by few. The results of his investigations, however, he never published. The same extreme modesty which made any public acknowledgment of his benefactions distasteful to him, also led him to contribute to others

* For most of the general matter in the present article, I am indebted to the Memoir by Prof. Jacob Ennis, published by the Entomological Society of Philadelphia in 1865. To the same society we are also indebted for the lithographs of Dr. Wilson.

any important discoveries that he made with the request that they publish them to the world. So it is that his name is missing from the rolls of eminent American Ornithologists, Entomologists and Geologists upon any of which his qualifications would have given him a high place.

Thomas Bellerby Wilson was born in Philadelphia, January 17, 1807. His parents, Edward Wilson and Elizabeth Bellerby, having both come over from England and married in America in 1802, Thomas was educated at one of the Quaker schools in Philadelphia during 1818 and 1819, but for the next two years attended school at Darlington, in Durham, England, having accompanied his father on a trip to his native country early in 1820.

At the age of sixteen he was back in Philadelphia studying pharmacy in the establishment of Frederick Brown of that city, where he remained for six years. His parents being quite wealthy and he being under no necessity of engaging in business pursuits, he decided to devote his whole time to scientific investigations. He had always been interested in natural history and during his pharmaceutical studies had become deeply engrossed in chemistry, mineralogy and geology.

In 1828 he entered the medical school of the University of Pennsylvania and graduated in 1830, after which he spent two years in Europe attending lectures in Paris where he studied under Cuvier and other notable men and also in Dublin.

In 1832 he returned home with apparently no thought of practicing professionally; but, having had experience with the cholera while abroad, he rendered valuable and generous aid to the poor of Philadelphia during the outbreak of this disease which occurred at this time, and later at different times gave gratuitous medical assistance to those in need.

In the spring of 1833 Dr. Wilson bought a farm at New London, Chester County, Pennsylvania, where he lived until 1841, when he removed with his brother to the vicinity of Newark, Delaware. At all times, however, he maintained a suite of rooms in Philadelphia where he spent portions of each year. He never married.

During the period from 1833 to 1841 Dr. Wilson devoted him-

self continually to the pursuit of natural history, collecting assiduously about home ; insects, birds, and geological specimens especially claiming his attention. He also took more extended trips on foot and horseback, visiting all the states east of the Mississippi and north of the Ohio as well as Virginia, Kentucky, Tennessee and portions of Canada. He also visited Europe in 1842-1843, again in 1844 and for the last time in 1851. On these trips he collected material of all sorts and in Europe purchased many valuable collections for the Academy of Natural Sciences of Philadelphia, some of them at that time the most famous collections of their kind in existence.

Dr. Wilson's connection with the Academy began in June, 1832, when he was elected a member, but his active participation in its affairs did not begin until after the death of his father in December, 1843.

Starting in 1844 with the gift of a collection of insects obtained near his home at Newark, Delaware, and a series of minerals from the north of England, there flowed into the Academy an almost continuous stream of donations covering various departments of natural history while all available books were imported for the library regardless of expense. It has been said that all one had to do in those days was to express to Dr. Wilson his desire to see a certain work and it was procured.

Mr. Edward Wilson, who was living in England at this time, acted as his brother's agent in securing many of the books and specimens and presented the Academy with many others on his own account. John Cassin was just about to publish his first ornithological contribution when Dr. Wilson began his gifts to the Academy and no doubt through his influence ornithology received most of Dr. Wilson's attention at the start. Later vast collections of fossils, mollusks, crustacea and minerals were purchased, many of them rich in types; while after 1860 Dr. Wilson transferred his interest almost entirely to the Entomological Society of Philadelphia, now intimately associated with the Academy as its entomological branch and became an authority upon the Diptera, although he steadfastly refrained from publishing the results of his studies.

It is the ornithological collections that interest us most in the

present connection, and the progress of their accumulation is well set forth in letters of John Cassin to Spencer F. Baird.

Under date of June 17, 1846, he writes "The most important item I know of in the ornithological line is the purchase recently made by Dr. Wilson, a notice of which you have probably seen in the papers. The Doctor has just been here to talk about it. He says there are at least 10,000 specimens and nearly five thousand species all mounted unfortunately and therefore requiring much space for their arrangement. He has I find hardly made up his mind as to the disposal of this collection; upon the whole he is rather inclined to erect a building at his residence in Newark, Del., expressly for a museum, though I was glad to perceive that he inquired very particularly about the practicability of accomodating the collection in the hall of the Academy which course I encouraged. . . . If the Doctor succeeds in getting the collection safely to the United States it will be a most important acquisition to American ornithologists answering the purpose as it will of a standard collection—think of 5,000 species!" This was the Rivoli collection which was purchased for Dr. Wilson by J. E. Gray whom he had consulted as to the best means of forming a representative collection of birds, and who has described his amusing experience in Paris when he made the purchase and the consternation of the French ornithologists.*

By July 25 Dr. Wilson had arranged to alter and enlarge the Academy's building and fit it with the necessary cases to hold the collection. "A large number of boxes has already arrived," writes Cassin; "one box has been opened containing vultures and eagles. Dr. Wilson proposes to buy not only specimens but ornithological books also."

By November 16, 1846, they were "nearly done unpacking the Rivoli collection. It is enormous," and by the end of the next year it was arranged in the cases, Cassin being paid by Dr. Wilson to do the work. Cassin's enthusiasm is not surprising: he writes August 11, 1847, "I to-day complete the arrangement of the woodpeckers. There are two very fine *Picus imperialis* as well as all other—I was going to say all other possible woodpeckers!"

* See Auk, 1899, p. 175. Ann. and Mag. Nat. Hist. 1869, p. 317.

“Five hundred additional parrots and conirostral birds and a large number of hummingbirds have been purchased in Paris and about 2,000 more are on the way to Philadelphia. Dr. Wilson has been in the city nearly all summer engaged in the arrangement of the geological collections in which very considerable progress has been made. The importation of books goes on in the most astonishing manner. Dr. Wilson has now nearly all the books in the lists furnished by you and lots of others. All of Gould’s works—*all*, not a single plate missing. Dr. Wilson is in a treaty with Gould about his collection of Australian birds and has authorized his brother who is in England to buy it at Mr. Gould’s price—\$5,000. This collection contains all known species of Australian birds except five which said five Mr. G. pledges himself to use his best endeavors to apprehend.

“I tell you what it is, I begin to believe, in some sort of an ornithological farieland or El Dorado or something of that sort in which I think Wilson ought to be Jupiter Ammon at least!”

In September, 1848, Pease’s Mexican collection was purchased and in December the Des Murs collection of eggs. Then in June, 1849, the arrival is announced of the Gould collection and Bell’s Panama collection as well as others. The Boys’ Indian collection came later and Cassin remarks of it “Gould has had his paw on ’em—they will be sour grapes for me!”

Cassin states again and again that Dr. Wilson is working with him in identifying the unnamed species and some papers he says Wilson helped him with while one on the Caprimulgidae “Wilson wrote a good part of it himself.”

One paper only was issued under Doctor Wilson’s authorship, a joint paper with John Cassin, entitled, “On a Third Kingdom of Organized Beings.”

During the examination of the Rivoli collection Cassin constantly mentions attacks of sickness brought on by exposure to the arsenical preparations used in curing the specimens, and Dr. Wilson having, in 1859, suffered twice from similar affections, he decided to give up all further contact with specimens preserved with arsenic. Consequently on March 20, 1860, he sent a brief note to Dr. Joseph Leidy, then curator of the Academy, presenting the entire collection of 28,000 specimens

which had hitherto been on deposit. No resolutions of thanks were adopted, as Dr. Wilson had upon a previous occasion made it plain that such action was exceedingly painful to him, and if persisted in would compel him to stop his gifts to the institution.

He has, however, been honored by several ornithologists, who have named birds after him, such as *Leptodon wilsoni* Cassin, *Schlegelia wilsoni* Bonaparte, *Glaucopis wilsoni* Bonaparte, etc. Even this attention apparently offended his modesty, as Cassin never named another specimen in his honor.

In addition to the immense donations of books and specimens already referred to, Dr. Wilson also bore a large part of the expense of the Academy's publications and rendered financial assistance in other ways, and eventually bequeathed \$10,000 for the care of the library. In all, his gifts to the Academy and the Entomological Society amounted to upwards of a quarter of a million dollars—a very large sum for the time in which he lived.

In 1863, upon the death of Dr. S. G. Morton, Dr. Wilson was induced to assume the presidency, but on June 23d following he tendered his resignation, not having presided at a single meeting. His sympathies during the Rebellion were always with the South, and he therefore differed politically with the great majority of his associates at the Academy, which was the chief reason for his resignation.

He spent all of his time now in study at his home in Newark surrounded by his books, and often continuing his work until well after midnight.

Early in March, 1865, he was taken ill, his sickness rapidly developing into typhoid fever. Refusing to leave his study in the early stages of his illness, he had a couch moved in upon which he could rest, and here, upon the fifteenth of the month, he passed away literally in the midst of his work.

The thousands of students who have had occasion to consult the famous library of the Philadelphia Academy, or the ornithologists who have studied the magnificent collection of birds which for years placed the institution at the head of the ornithological museums of the world, can well appreciate the debt that American science owes to that quiet, unassuming gentleman, Thomas B. Wilson.

The D. V. O. C. and its Twentieth Anniversary

BY GEORGE SPENCER MORRIS

If one were inclined to question the potent charm of bird study he would surely have his doubts dispelled by reviewing the history of our Delaware Valley Ornithological Club which is about to start on its third decade.

It must indeed be a strong and binding interest which takes a group of men and knits them in so close and kindly a fellowship for twenty years.

To many of us who have played our little parts in the history of this organization it has meant a great deal and we find on self analysis that the D. V. O. C. has come to hold a really vital place in our existence. That is the personal side of it. There is, however, a broader and more important aspect of the club and its work.

Its birth and progress truly mark the renaissance of ornithology in the city, where once it flourished, but for many succeeding years languished—the city that once knew Wilson, Audubon and Cassin.

Faint ornithological quickenings might have been detected throughout the late seventies and early eighties. Collins and Trotter, fired by a common impulse, had started collections of bird skins; Rhoads, with little Morris often at his heels, was scouring the woods with a slingshot when he could not beg or borrow a gun; Stone had started to delve among the dusty skins of the Academy; Baily was busy with the birds of the Haverford woods; while Reed and Voelker were exploring the Tinicum meadows. Then some subtile influence drew these kindred spirits together, all save Collins, whose early death we still mourn.

Thus was born the Delaware Valley Ornithological Club, and then was launched the impulse, which after twenty years has

once more made Philadelphia one of the chief centers of ornithological interest in this country, and has made the Academy of Natural Sciences one of the regular meeting-places for the annual convention of the American Ornithologists' Union.

We would not appear boastful, but it is probably a fact, that at no time in the history of bird study in this country has a body of men been able to keep up so full and persistent a line of investigation of the ornithological conditions of a given region for almost a quarter of a century.

Not that the Club's work has been confined to the Delaware Valley. Our members have traveled far. They have wandered from the Atlantic to the Pacific and from Maine to Florida. Some have explored in Mexico and some have penetrated the frozen north. Others have visited the islands of the sea, or have renewed acquaintance with the birds of history and song in England or on the continent.

Such journeyings, however, may be looked upon as the individual efforts of certain men who happen to be members of our organization. Our real club work relates to the region which lies between Cape May and the Delaware Water Gap, or to make it a little broader, to Eastern Pennsylvania and Southern New Jersey.

Our early efforts were largely devoted to the formation of local lists, especially in connection with the study of the migrations. This has always been an important part of our work, but our outlook soon broadened, and probably one of the great secrets of our success is to be found in the variety of viewpoints displayed at our meetings. At these a paper or talk by one or more of the members is always prepared in advance and announcement of the subject made by postal. Informal discussion follows the reading of papers in which all join freely. Thus our meetings bear on bird study from all sides, and in so doing reflect the personalities of our members. Scientific, popular and aesthetic ornithology are dealt with; art and photography play their part; the literary man and the sportsman are valued contributors to our evening's entertainment.

And what charming evenings they are which we spend in Stone's snug quarters at the Academy. Outside the world may be white and the winter winds whistling, but within it is cozy

and warm; the skins of summer birds are spread on the table round which we gather, and the talk may be running on days of song and sunshine and nest-building. There is Trotter with snapping eyes and incisive manner shooting some new ornithological theory at his club-mates and hammering it home in clear, terse sentences; or Hughes with his delicious drawl, rambling along in a reminiscent mood as he tells of birds and big game, and seasons his yarn with a dry humor wholly his own; or Rhoads just back from parts unknown with a fresh batch of bird skins and a lot to say about them; or De Haven newly returned from the coast with a whiff of the salt sea in his whiskers, ready to tell us stay-at-homes what the ducks and brant are doing. Few men can speak with greater authority of our coast-dwelling birds than De Haven. It may be, Weygandt is holding us half spell-bound as he reads one of the delightful word pictures which his facile pen has traced, and whereby he transports us at will through the green meadows of spring or into the cool shades of the summer woods. Perhaps Bailly is on hand with a new lot of photographs, which are sure to bear tribute to their author's skill and patience, as well as his artistic sense and keen powers of observation. Pennock or Carter may be giving clear and illuminating accounts of recent trips or of some fresh bit of news from the bird world. And then there is Stone, with his hand ever on the tiller, quiet of manner but potent in influence. No matter who may be president, we all recognize him as the power behind the throne. With infinite tact he gives a push here and a pull there, as occasion requires, keeping us all in line. In our hearts we know that the guiding hand of Stone has made the D. V. O. C. what it is.

Our club exists with the least possible amount of business and politics. These are the rocks that have wrecked many a promising organization. We meet solely with one end in view, namely, the study of birds, and this is pursued in an atmosphere of good fellowship. The ornithologist is almost always a good fellow; he can hardly be otherwise. Life in the open, the love of nature, the joy in her beauties, the touch of adventure, the dash of sport, and then the illusive grace and charm of the wild bird pervading it all—that is ornithology. Such things

are not for the morose or mean man; of course the ornithologist is a good fellow; he cannot help himself. Birds and good-fellowship are, therefore, the watchwords of the D. V. O. C.

As has been said before, this club means a lot to some of us. Warm friendships have had their birth at our meetings, and with the passing years these have waxed stronger and stronger. It is there that we receive the inspiration and encouragement that sends us into the field full of enthusiasm and that brings us back eager to tell our story and to show the fruits of our labors.

The members of the Delaware Valley Ornithological Club, in looking back over its twenty years of existence, see it against a fair background that reaches far beyond the somber walls of the Academy. 'Tis a background of woods and streams; of sandy beaches where gray gulls hover; of green salt meadows where curlews cry; of rolling hillsides and pine-clad mountains; of shady rivers, the haunt of the wood-duck; of dark morasses where dwells the heron; of breezy bays where the wild-fowl flock; of lonely lakes where laughs the loon; of silent nights, gleaming campfire and snug tent. The white and glistening fields of winter, the tender beauty of the spring, the richness of the summer-time, the glory of the autumn. The new day breaking on the mountain-tops, the red sun sinking in the sea. Truly "the wilderness and the solitary place" have been glad for us. Blue sky and white clouds, gray mists and driving storm; the crack of the gun, the tug of the sail, the stroke of the paddle—these are the things that lie back of it all and make us glad we have lived. To such things the elemental and that which is best in us responds. We may be often in doubt as to the wisdom of belonging to this or that organization, but we know that the D. V. O. C. is worth while.

After twenty years we find our little club stronger and more in earnest than ever before, and thus we meet the future with the confidence born of the knowledge that a good work has been well begun.

Duck Shooting on the Coast Marshes of New Jersey

BY I. NORRIS DEHAVEN

The region especially referred to in the present paper extends from Atlantic City northward to the upper part of Barnegat Bay. It is from five to seven miles wide and includes three large bays, Great, Tuckerton and Barnegat, together with a great many smaller ones and numberless thoroughfares and creeks. The bays have deep channels but their bottoms are mostly flats, some of which are exposed at low tide while others are covered with a few inches to several feet of water and usually with a dense growth of marine vegetation which furnishes an abundance of food for the water fowl.

The vast extent of salt marsh or "meadow" that reaches out on every side consists of a thick growth of *Juncus gerardi*, *Spartina* of several species, *Salicornia* and other plants, the surface being just above the ordinary high water, though during the high tides of autumn the entire marsh is under water, with only here and there a tuft of taller grass showing above the flood. There are small islands scattered about the bays and on the east the long narrow beach islands which form the ocean barrier and are often several square miles in area, some of them supporting a small growth of trees.

The upper parts of Great Bay and Barnegat Bay are fresh or nearly so, owing to the various rivers and creeks that flow into them from the pine barrens, bringing down the clear brown water of the cedar swamps.

This region thus offers a great variety of feeding grounds for the water fowl. The upper parts of the bays and the creeks and rivers are the haunts of the marsh ducks, such as the Mallard, Wood Duck, Teal and Black Duck, while the main expanse of water and marsh back of the island beaches is used by the div-

ing ducks. In the fall, the Scaup, Black Duck, Shelldrake, Red-head, Bufflehead, Brant and Canada Goose, are the common species, while in the spring there are in addition straggling Mallards, Pintails, and Widgeon. Goldeneyes are scarce ducks in this region, and neither the Hooded nor American Merganser are often seen, the Red-breasted being the common "Shell-drake" of the gunners.

The Black Duck occurs regularly in both sorts of feeding grounds and is very fond of the salt ponds on the meadows, where a fine grass grows that is a favorite article of food.

The Brant and Geese use the wide flats near the inlets, particularly the sound flats where they sit at low tide far from any possibility of danger. When the tide comes in they fly up the bay if it is windy, or if calm they drift up with the tide in large flocks. Brant only become in prime condition for eating in the Spring, and are therefore not much shot before January. Outside on the ocean occur the Scoters or Surf Coots and Long-tails or Old Squaws, which occasionally come into the bays, especially near the inlets.

The diving ducks do not seem to pair before they leave us for the north, but the Black Ducks pair early in March, and some of them still breed in sheltered places along the New Jersey coast, although the vast majority move north by the middle of that month.

The boats used for shooting on the New Jersey marshes are apparently peculiar to this region and Long Island. They are twelve feet long, four feet wide and about fifteen inches deep, decked over with a cockpit some four and a half feet long, surrounded with a rail about an inch and a half high. It also has a canvass curtain in front about eighteen inches high, extending to the rowlocks where it is about six inches high. This curtain is raised by putting a stick under it and keeps out the wind and waves in rough weather. The bottom of the boat is oval, rising forward and aft to meet the deck, which curves down from the cockpit to meet it. From the rowlocks aft, there is provided a detachable rack to hold the decoys or stools, which number from forty to fifty. They are hollowed out, carved and painted, to represent the several kinds

of ducks, and have a piece of lead on the bottom to keep them upright in the water; they are fastened together in pairs and each pair is provided with a line and weight for anchor. The decoys and the boat also are made of white cedar which will with care last many years. A boat that I was using this fall was forty years old and was perfectly tight and dry; it was made by the father of the present owner.*

These boats are also provided with a sail, centerboard and rudder, all of which can be stowed away under the deck with the oars. The cockpit is then covered with a light hatch or painted canvass and everything kept dry inside no matter to what storms the boat may be exposed. There is also a pair of runners on the bottom covered with brass for running on the ice in winter, and with sail up and a fair wind the boat will attain a high speed, and if it comes to open water goes right on through and out on the ice on the far side. They are celebrated as rough-weather craft, and a good oarsman can cross the bay in one of them when it is impossible to handle any other kind of boat.

In shooting ducks two men usually go out together, each in his own boat. Two men can easily pull one of the boats out on the bank, so one stays by the stools while the other chases the crippled birds in his boat. They put out all their stool ducks in one flock about thirty yards from the point they intend to shoot from. The Brant and Black duck decoys are placed up to windward and the Scaup and Redheads are trailed down the wind from them. They pull their boats into the grass or into holes that have been dug into the favorite points, the racks are removed, and the deck and sides covered with sea trash. Then the gunners lay down with only their heads showing, and the whole boat looks just like a bunch of sea trash left stranded by the tide.

* A house near Cape May Court House, N. J., built over a hundred years ago was recently torn down. The shingles with which the sides were covered were made of New Jersey white cedar and, although very much weathered, they were dry and sound, and would have resisted the storms for many years more. Unfortunately, portable sawmills and the greed for profit is rapidly destroying all the white cedar in the New Jersey swamps and depriving the natives of a valuable tree, leaving only mountains of sawdust where the dark cedar swamps formerly stood.—W. S.

Any bird that comes within fifty yards is shot at if seen in time, but birds that alight among the stools are not shot at until they swim clear or take flight again, as there is danger of damaging the stools. The ducks come very differently to the decoys; the marsh ducks generally come high up and swing around two or three times before they set their wings and drop down, and when shot at every duck darts upward and away, each one looking out for himself. Occasionally one will come in low and drop in among the stools without any hesitation. The diving ducks usually come low over the water well outside of the stools and go down the wind at great speed as if they were going away, but round up quickly, head to the wind, and throwing their legs out in front of them back their wings and drop in with a splash, or wheel away, turning up their bellies as they do so. Their speed is very great, and the gunner must be quick to rise and discharge both barrels before they are out of range. Brant come to the stools much more slowly, wandering back and forth several times, looking all black as their heads are toward you, and then as they turn away showing their white flanks. As they wheel just over the stools or up to windward of them they generally bunch, and at this moment several may be shot at once. Brant are great birds to carry shot, and a wounded bird will often fly away a long distance with the flock before it drops. It can be easily secured, however, as they are poor divers. They are suspicious of points or land of any kind except sandbars, and flocks do not often come in within range, though pairs and single birds often approach the stools without hesitation. Shelldrakes will come from over the water or meadows from any direction, high or low, and will often pass within a few feet of the gunner's head.

Up to 1890 the bulk of the ducks killed on the New Jersey coast were shot by "Baymen," who made their principal living from the natural resources of the region. They owned cat-boats or small sloops, and took out sailing and fishing parties from the various resorts during the summer. Then they put cabins on their craft and went out on the bays for a living. They spent the time fishing, gathering oysters and clams, spearing eels, and gunning, living all the time on their boats,

and when they had gotten together a fair amount of stuff they would sail with it or ship it to market. This business had no appreciable effect upon the abundance of ducks so long as the Baymen were few in number, but there soon came to be a considerable permanent population on the island beaches as the resorts increased, who catered to the summer visitors for three or four months but had no regular occupation during the rest of the year. With such opportunities of sport and profit spread before them as the region offered they naturally took to the bays by the hundreds, with the result that oysters and clams became scarce and game was shot or frightened away until there was not a living left for anybody. Where in the eighties two men could get six to ten ducks on a morning's shoot, by 1890 one or two was the limit, while on many a day the gunners did not get a single shot.

Naturally the Baymen scattered and sought other occupations which, while less exciting, gave a more regular return for their labor. Then came more stringent game laws. In the old days they began to shoot wood-duck and teal in September and kept up the fusillade until the last shelldrake went north in May. Now shooting was limited to the period from November 1st to March 15th. Night shooting was stopped and also shipment of game out of the state, and all gunners were licensed. The oyster grounds, moreover, were leased and clammers had to have licenses. There are still oystermen, clammers and fishermen, but conditions are changed, and each one follows exclusively his own occupation, working on contracts with employers to take up so many bushels of oysters or deliver so many thousand clams in a certain time. They have no longer time to shoot ducks even though they are to be found close at hand. Nor do the fishermen shoot to any extent; they now outfit for the purpose of taking out gunners who come down from the cities, and they well know that one duck killed by these visitors brings them better returns than did many formerly sent to market. So to-day one live duck on the bay is more highly prized by the natives than a pile of dead ones. The result has been that for some years past the ducks have been coming back in gradually increasing numbers, until at the

present writing Black Duck, Scaup, Redhead, Brant and Geese are as plentiful as they were twenty-five years ago. In fact, last spring Brant and Geese were more plentiful than any in season within the memory of the present generation of gunners. Under favorable weather conditions last spring two men got twenty-six Geese in one day near the drawbridge at Surf City and twenty-four Brant were obtained by another party. I, with a friend, got eighteen Scaup in a morning's shoot, which is surely enough to satisfy anyone.

Some species have, of course, not returned in their former numbers, notably the Wood-duck, though there are still a few, and last fall a drake came to some decoys out in the salt water, an unusual occurrence. The gunners did not shoot it, recognizing how scarce the bird is becoming.

ADDITIONAL NOTE ON THE WATERFOWL OF BARNEGAT BAY.

In consideration of the contrary opinions on the abundance of waterfowl on the New Jersey coast and the most desirable character of legislation to be enacted for their preservation, a commission was appointed this year to collect facts and report to the State Legislature. The report, which I have been permitted to examine by Mr. Wm. Dutcher, one of the Commissioners, is very interesting.

The Sub-Committee on Migratory Birds made a personal examination of the very waters covered by Mr. De Haven's paper on November 29th and 30th, 1909, cruising on a power launch from Toms River to Atlantic City.

No wild fowl, except an occasional stray one, were seen until after passing Barnegat Inlet. From Gulf Point to Long Point several hundred Canada Geese, about two thousand Brant and a large number of Black Duck were seen, with an occasional Whistler (Goldeneye), Old Squaw and Scaup (Broadbill), but no appreciable number of either. Between there and Tuckerton it became too dark to see birds. South of Beach Haven the next day there were two to three thousand Black Duck and fifteen hundred to two thousand Brant, and in Grassy Bay from seven to ten thousand Brant. The total absence of Broadbills on these days was very noticeable.

At Tuckerton about 275 gunners attended a meeting called by the Commission and testified. The unanimous opinion was that there are less Ducks than there were ten years ago, but that they had increased during the past two years.

Mr. H. Walter Sapp, sixty-five years of age and a life-long resident of Tuckerton, made the following statement regarding the abundance of the various species:

Shelldrake (*Mergus serrator*). Very common but late in the spring season.

Mallard (*Anas platyrhynchos*). Not very many.

Black Duck (*Anas rubripes*). Very common.

Baldpate (*Mareca americana*). Not plentiful.

Green-winged Teal (*Nettion carolinense*). Very few.

Blue-winged Teal (*Querquedula discors*). Very scarce.

Pintail (*Dafila acuta*). Fairly common in spring and fall.

Wood Duck (*Aix sponsa*). A few breed.

Redhead (*Marila americana*). Quite plentiful.

Canvasback (*Marila valisineria*). Rare.

Big Broadbill or Scaup (*Marila marila*). Most common duck.

Little Broadbill (*Marila affinis*). More of them in spring than fall.

Whistler (*Clangula clangula americana*). Fairly common to quite plentiful.

Bufflehead (*Charitonetta albeola*). Quite a good many.

Old Squaw (*Harelda hyemalis*). Not very plentiful; used to be abundant; no reason known for decrease.

King Eider (*Somateria spectabilis*). Very seldom seen.

Coots (*Oidemia americana*, *deglandi* and *perspicillata*). About equal in numbers, fairly common, mostly outside the surf.

Ruddy Duck (*Erismatura jamaicensis*). Not common.

Snow Goose (*Chen hyperborea nivalis*). Rare.

Canada Goose (*Branta canadensis*). Very common; stay all winter.

Brant (*Branta bernicla glaucogastra*). Very common; stay all winter.

Swan (*Olor columbianus*). Very rare.

Mr. W. W. Justice, Jr., who has had considerable experience

with the wild fowl of Barnegat Bay for some years past, sends me the following as his opinion of the relative abundance of the Bay species for the past ten years:

Brant, Black Duck, Canada Goose and Broadbill regular and abundant.

Redhead abundant at times, apparently more plentiful during the past three years.

Goldeneye (Whistler) fairly plenty, but never in large flocks.

Sheldrake regular, often till late in April.

Old Squaw and Butter Ball more or less regular.

Canvasback and Hooded Merganser, one record of each.

These lists are given to show how opinions of equally reliable men may vary in some respects. I have other lists which are obviously based more upon memory and hearsay than upon present conditions, and hence are worthless for comparison.

There seems to be no question but that there has been an increase of ducks within the past few years. Furthermore, the increase is due largely to the stopping of spring shooting north of New Jersey. The refusal of this and other states to stop shooting ducks on January 1st will certainly practically exterminate many of the remaining species in another generation unless all migratory birds be placed under the protection of the national government, for which a movement is now under way.

—WITMER STONE.

Cruising Through the New Jersey Pine Barrens*

BY J. FLETCHER STREET

The bird observer who has failed to make the acquaintance of the little rivers of South Jersey, has not only neglected an unusual opportunity for study, but has also foregone the pleasure of days and nights out of doors amid surroundings peculiarly idyllic.

To me, most interesting of all these watery thoroughfares is the Great Egg Harbor River. Flowing as it does from innumerable springs and winding its way by easy curves and reaches through mixed forests of pine and deciduous growth, or sweeping out along a boggy clearing, it affords one in his pursuits much diversity of experience.

Early in the month of May while under a spell of incipient bird fever, an agreement was reached with a fellow enthusiast to explore this alluring stream. Lacking definite instructions we consulted a map of the Geological Survey and selected Winslow Junction as a possible satisfactory starting-point. Preparations were readily made, and upon one of those rare days of early spring the expedition launched forth. A morning train carried us to our destination and left us with our boat and baggage at the station platform, keen for the venture but more or less perplexed as to the next move.

Winslow Station stands a good half mile from the village and is separated from it by pasture land and meadows. How circumscribed the life and thought of a community may be had never before been so forcibly impressed upon us. All our inquiry evoked little information as to how to reach the stream which we knew to be only a few miles distant. Finally some one suggested bearing on to "Inskeps." The direction seemed

* A portion of this course has been made memorable by Henry Van Dyke's "Between the Lupine and Laurel." Cf. also CASSINIA, 1903, p. 74.

right but the name did not appear upon our map. However, we agreed to let the matter rest with this suggestion.

On our jaunt from station to town we found a bird life strikingly typical of the intervening country. From the open fields came the drowsy buzz of the Grasshopper Sparrow, while above innumerable Vultures, marvels of aviation, floated silently by on poised wing. Individual trees standing in the midst of plowed fields harbored hosts of chattering Grackles, while the growth along the roadside was noisy with frolicking Goldfinches. The village itself was not without attractions. Of almost Sabbath-day quietness it expressed a degree of comfort and contentment little realized in our more urban communities. Some of the homes boasted paint, but those which commanded the most attention were of the low rambling sort with whitewashed sides and shell-lined walks as confines to scant flowerbeds. An occasional martin box, doing business, was also noted.

At the general utility store all our supplies were procured and with repeated "Goodbyes" from the boys gathered about us we climbed aboard our "prairie steamer" and started along second stage of the journey. The drive through the woods the strongly emphasized the kind of country we were henceforth to reckon with. The sand of the road gleamed white in the noon-day sun. At the sides where the shallow soil of vegetable mould afforded nourishment, blossomed the lovely lady's-slipper, and in the more open patches large colonies of sky-blue lupines. From the oaks ahead the Crested Flycatcher challenged us with harsh call, while from the tops of the scragged pines came the monotonous "chippy" note of the Pine Warbler.

At length at a turn of the road we came upon a stream, and to our surprise were informed that Inskeps had been reached. There was nothing to indicate a settlement, past or present, and we wondered how the little clearing, with no distinctive geographical features, had earned for itself a name. For us, however, the site was well chosen. Here was to begin our journey amid prospects most pleasing. Only a short distance above, the river broke out into a broad meadow lined with rush and flag. In the shallow waters the bayonet tips of goldenclub glittered in the afternoon sun. Near here, in open woods, we arranged our first camp.

The day declines, and the Wood Thrush, latest of all evening songsters, pours out his soul in the sweetest of liquid notes. At length the woods are all but hushed and an indescribable sense of loneliness comes upon us. Every sound attracts attention. Even the earliest mosquito, possibly the ancestor of that later host which makes the spot unbearable in summer, hums his presence. All these minor interruptions, however, are lost when from a distant quarter of the woods the call of the Whip-poor-wills arise in ever-increasing volume until the sounding notes, at first a pleasure, now become a monotony—most assuredly not an influence conducive to sound slumber. Had invectives been well-directed missiles, the Whip-poor-will camp-meeting would have been routed ignominiously.

At daybreak the voices of twittering birds stirred us from our broken slumber. To hear the purling waters of the brook made us eager for the start. Launching our canoe, we hastily climb in and are off. What a day for pleasurable excitement and experience! Overhung with leaf and branch the stream is difficult to navigate. In these first reaches there are no banks, relatively speaking, no happy vistas of overarching trees to gaze along. Little isles of alder and the fragrant *Leucothoe* shrub stand out defiantly, in the midst of the crawling current. Everything is chaos. Veritable dams occur where fallen trees back up the offal of the stream. These must be brushed aside or else cut through. In the early day an old bridge was passed, as neglected and unused as the road which leads over it. As we penetrate these tangles the voice of the Yellowthroat is heard most frequently. Flying at times to a nearby branch, the little fellow scolds vehemently. We wonder if it is not with a measure of pride that he thus vaunts himself before us, conscious, perhaps, of the spring-freshened color of his plumage.

There is a marked advantage in observing bird life from a canoe. Everything is approached from a different viewpoint. Banks and borders are explored without fear of swishing leaf or snapping twig carrying an undetermined species beyond the line of ken. And so as we steal down upon the unsuspecting Chewink, instantly he stops his scratching in the brittle leaves, flies off with a loud alarm note only to return stealthily through the

underbrush to gain if possible a reason for this unseemly interruption.

From the uppermost leafage of the birches comes down the wiry, gentle song of the Black and white Creeper, and at a lower elevation, flitting from branch to branch in rare gymnastic fashion, Redstarts spend their hours in search of insects.

Altogether it was a day of close association with old friends; not those of the home grounds and orchards but dwellers of the deep high woods and tangled creek borders, as fond of seclusion and freedom as we ourselves were beginning to feel.

At the confluence of the Penny Pot and the Great Egg Harbor River a marked change is to be observed. The banks spread farther apart. Firm and well-defined shores replace, to a large extent the low, boggy stretches of the upper stream. Along in the afternoon, at a point where the stream widened perceptibly and the water flowed deeply and quietly, we paused for our second camp. Encompassed as we were on all sides with dense forests of oak and pine, it was easy to fancy ourselves many more miles remote than was the case. At evening the pines cast a gloom across the dark waters of the river, and as night settled down with its inky shades there seemed little between that silent wilderness and the sky above—a sky radiant with twinkling stars.

Our next day's journey was along a comparatively open stream. Here we drifted idly with the current. At frequent intervals we could hear the muffled drumming of the Grouse. Once we came upon one unawares at a bend of the stream, only to share in the surprise. Frequently the character of vegetation changed perceptibly. About noon we came upon a great open marsh at the head-waters of Weymouth Pond. Already through its shallows a new growth of cool, green blades had pushed up. It seemed that we wound for miles along its thoroughfares. Here we first added the short-billed Marsh Wren to our rapidly increasing list of birds. We found him busily exploring a clump of last year's stalks, with tail perked up and singing with unusual exuberance. At our close approach he chattered a rebuke and lost himself among the tangled grasses. In the distance the billowy masses of deciduous growth bespoke the

presence of the village. As we approached the closer, our attention was attracted to the dead forest at the head of the pond. With the damming of the waters below thousands of trees had come to be sacrificed through inundation. To-day these stand as silent sentinels, branchless and with bleached boles. In holes along this stumpage the Tree Swallows are nesting, while associated with them in their erratic flights up and across the broad expanse are countless Barn and Bank Swallows.

We selected a camping-place well up the pond, since we had learned the fascination of seclusion. Afterward we paddled to the village to replenish our larder. Here, couched at one corner of the broad, tranquil pond we found a town virtually falling to pieces. Everything was in decay, even the provisions obtained from the sleepy storekeeper. These, too, showed the ravages of time.

Out of the heat and beauty of the day a night of bitter cold closed in. Even the Whip-poor-wills were silent. They, too, had nestled down. Next morning, hopeful for a good bird count, we made an early start from camp, paddled up the pond to list the swallows, observed the Sandpipers teetering along the shore, and explored the orchards and gardens of the village before the villagers were about. Here were found such open-country species as the Bluebird, Field and Chipping Sparrow. Here also was observed a gorgeous Oriole intent on his morning meal, stopping at times to sound his loud whistled melody. Later we carried our canoe around the dam and launched it in the swift current below. Where before the pines and huckleberries had been conspicuous, here the deciduous trees and the laurel held first rank. Here, too, in the lofty trees we first heard the migrant Chestnut-sided Warblers.

Jostled along by the swift current, no slight skill was necessary to keep the canoe within its course. Sour gum and birch spray overarched the stream, making it a veritable trellised waterway. Later "Dead River," a peculiarly landlocked bay, was passed, only to paddle out into the meadows of Lake Lenape, in character a counterpart of those of Weymouth Pond. The lake along its western boundaries is bordered with high wooded banks, affording nesting sites for Bank Swallows. At

its lower end stands a village. Here the Great Egg Harbor ends relationship with pine grove and leafy thickets. Here we make our last portage. Now the tide flows in, bearing with it the tang of the neighboring sea. The meadows in their turn have given place to salt marshes which stretch out for interminable distances. Many tidal creeks break through these to swell the volume of the river.

In the tall cord grass along the borders we hear the song of the Sharp-tailed Sparrow. Frequently a Fish-hawk is noted traversing the watery expanse in laborious flight. A glint of whiteness beneath him tells the story of a successful dash.

Realizing a strong wind astern, we improvised a sail of bagging, which lent considerable impulse to our going. Down into wind-swept hollows or along the wave's white crest we press through foam and spray. Thus, with aid of wind and tide, we cover the remaining miles of our course, and towards a favorable shore reluctantly turn in our little boat. Yet much remains for rest and thought, satisfying and illimitable. The picture of it all goes with us on our homeward journey.



PHOTO. BY THOS. H. JACKSON.

YOUNG BROAD-WINGED HAWKS.

On the Nesting of the Broad-winged Hawk (*Buteo platypterus*) and Goshawk (*Astur atricapillus*) in Pennsylvania

BY ROBERT P. SHARPLES

Every year the Broad-winged Hawks are becoming more numerous in Chester county. They seem to be spreading over this territory much as the Barn Owls did a few years ago. The first nest of which I have record was found near Hershey's Mill on May 3, 1891, and two eggs was taken from it by S. B. Ladd. He was passing along a nearby road on May 1, when he met a man carrying a dead Broad-winged Hawk, which had just been shot. A search two days later resulted in finding the living parent incubating the eggs. They had been laid in an old nest of the Cooper's Hawk, about seventy feet up, in a chestnut sprout, which grew in the woods near a pond. Within the last five years one to three pair of these hawks have been located as breeding near West Chester every season, and this spring I have found seven nests without making any especial search for them. There is a nest about 70 feet high, in the Castle Rock Woods, and four others are in the Brandywine Valley near Downingtown.

Formerly the Cooper's Hawk and the Red-tail were the most numerous hawks hereabouts. Now I never find more than one of each of these in a season, and they have become rare as breeders. The Broad-winged Hawk, which has taken their place, generally builds its nest in May, just as the forest leaves are coming out, and it benefits from their shelter. The nest is always a new one, so far as my experience goes, with the single exception noted above ; and usually but two eggs are laid, though this year every nest examined had three eggs in it. In one case where a set of perfectly fresh eggs was taken the birds laid a second set, and I am inclined to think this is a usual occurrence. Green leaves, pulled nearby, were found on every set of eggs.

The favorite nesting site is a chestnut-sprout woods of good height, and nests are placed right against the main trunk of a tree, usually from thirty to forty feet from the ground, though I have found two this year that were seventy feet high. The bird is not a timid one. One nest near Coatesville was quite near to a country school house, and directly above the path used by the children in coming to the school building.

It is rather easy to determine when young birds are in the nest, as they seem always to sit in the nest with their heads toward the center, so that when they evacuate the ejecta are thrown entirely clear of the nest structure, forming a more or less uniform ring of droppings around the foot of a tree.

The Broad-wing does not destroy the farmers' poultry, neither does it disturb other birds. It lives in the woods and subsists largely on insects, and may be safely classed as a beneficial Hawk. As a consequence the farmers do not have much opportunity, even had they the desire, to destroy it.

THE GOSHAWK.

My friend, Mr. R. B. Simpson, of Warren, Pa., has found the Goshawk breeding this spring near his home, and the event is so interesting that I present a record of it, quoting from Mr. Simpson's letters:

"February 22, 1909, was beautiful, warm and sunny. I took a long walk above Morrison's Run into the heavy timber, mostly giant white pines, with a good sprinkling of hard wood. While going along a Goshawk flew out ahead, calling loudly, and alighted. As I went that way it flew again, only a short distance, but was lost to sight in the heavy timber. Before long I heard a noise, and in looking up saw that the Goshawk had alighted almost overhead. It left at once but flew only a short distance, calling most of the time. I soon saw a big nest in the forks of a pine close by. It hardly seemed possible that this bird was getting ready to breed so early, so I went back some distance and sat down. The Hawk stayed near, calling frequently.

"On March 9, 14 and 19 I went up to the spot, and every time found the female in the big trees, and always close to the

nest. I thought it was high time to see the inside of it, and started up the tree. Before I had gotten halfway up all doubt about the nest being occupied was settled. The old bird would come at me like a bullet, and just sheer off at the last moment. She did not utter a sound during the charge. I found the nest all completed and lined and ready for the eggs. The nest is about 60 feet up in a white pine.

"I did not go near the nest again until April 2. Then I took a friend along with me who is an expert lineman and is interested in photography. It was a rather bad morning, snowing and several inches of snow on the ground in the mountains. When we came in sight of the nest all was quiet. I hit the tree with a stone, and the female at once left. Contrary to our expectations she refused to come back again, in marked contrast to her former behavior. Both old birds sat off in the big pines and called, but refused to come near. My friend went up and photographed the nest and eggs. There were three eggs. The nest was so big and wide that I gave up the notion of taking it along. The eggs were perfectly fresh.

"On April 20 I found the female sitting upon one of two old hawks' nests in the same neighborhood which had been used for several seasons by Redtails, and on May 20 I returned expecting to secure the young birds. To my surprise I found that the eggs had been destroyed, apparently by a Crow or Red Squirrel, and the nest deserted. The Goshawks, however, were still about, and I soon discovered that they had two fresh eggs in the other old nest, making the third set that they had laid this season.

"It was July 2nd before we again visited the spot prepared to capture the young which we felt sure were pretty well fledged by this time.

"All was quiet as we drew near the nest and we began to wonder whether some accident had happened again, when suddenly up among the limbs of the trees ahead of us the female bird appeared, and came straight at our heads with wings half closed, but making no sound.

"So close did she come that we instinctively ducked our heads. As she passed she screamed and was at once answered

by the male. We sat down in hopes that they would quiet down a little, but they remained very bold, screaming continually and alighting within thirty feet of us. We could see all markings plainly and noted the smaller size of the male and his weaker voice. Their cries resembled those of the Sharp-shinned Hawk, but were much louder. Sometimes they seemed to say 'get out, get out, get out.' My friend finally started up a tree whose trunk overhung the nest, taking a short stout stick along for defence, should the bird come too close. In spite of his demonstration with this weapon the female came several times within ten feet of his head. After photographing the young he drew up a long pole and pried them out of the nest, while I stood below to catch them and break their fall. One of them twice caught my hand in his claws, drawing the blood, but we got them home in a basket and shipped them to Mr. Thomas H. Jackson of West Chester, who studied them until full grown, and photographed them at various times. Eventually they were disposed of to the New York Zoological Garden.

"Under the tree we found many bones, which we examined carefully. Almost all were those of the Red Squirrel, which is very numerous in this region. There were also a few skulls and bones of Chipmunks but no remains of larger animals. Near by there are hundreds of acres of slashings and laurel thickets, where Cottontails and varying Hares are common and quite a number of Grouse occur, but there was no evidence of the Goshawks having killed any of them."



PHOTO. BY THOS. H. JACKSON.

YOUNG GOSHAWKS.

Breeding Birds of Passaic and Sussex Counties, N. J.

BY WILLIAM L. BAILY.

The distribution of birds in the central and southern portions of the State of New Jersey has been fairly well established, but the counties along the northern border of the State have been very much neglected and little definite information has been recorded from that part of the State.

With a view of making the acquaintance of the region in the height of the breeding season in Passaic and Sussex Counties, Dr. William E. Hughes and Messrs. S. N. Rhoads and W. L. Baily began operations at Sterling Forest, Greenwood Lake, Passaic County, arriving there at 6 p. m. June 6th, 1909. Sterling Forest Station is the terminus of a branch of the Erie Railroad on the northern state line between New Jersey and New York, and on the eastern side of the beautiful Greenwood Lake 650 feet elevation, which is about eight miles long by three-quarters of a mile wide, extending about four miles into each state, and is flanked by mountains rising from 600 to 1,300 feet above it. From the top of these the whole country round appears as a rugged mountainous region, the Wawayanda range, the highest in view, being about 1,400 feet above sea level. Greenwood Mountain rises about 1,350 feet above the lake on the west side, being the culminating point of the rugged hog-back of the Bearfort Mountain range. A wide valley of open cultivated country sweeps southwesterly parallel to the frowning hills, covered generally with the deciduous trees of thirty to forty years' growth; hemlocks are scattered here and there, survivors of the last cutting. The outlet of the lake flows to the southeast through a rocky, precipitous gorge, along part of which the railroad cuts its way from New York City.

For a week the time was spent from sunrise to sunset, excepting during one of the rainy days, almost entirely afield. Considerable ground was covered in a great variety of country, the object being to cross the breeding ground of every species possible. Three days were spent on the two sides of the lake and in nearby mountains, climbing on the eighth to Little Pond on the top of Greenwood Mountain, where tamarack, tall spruce, and pitcher plant grew in the alder swamp just below this elevated body of water which is about half a mile in extent.

June seventh was spent at Wawayanda Lake, 1200 feet elevation, ten miles to the westward in Sussex County; another beautiful lake two miles long and considerably higher than Greenwood, and where we saw our only Black-throated Blue Warbler. An extensive swamp of tall spruce, cedars and hemlock, almost impenetrable except for a path through the center, was disappointing in that it seemed to contain few birds and nothing new on the trip.

The ninth brought a cold, hard rain through which Rhoads and Baily drove nine miles to Macopin or Echo Lake, 1000 feet elevation, the waters of which flow northward into Greenwood Lake. Dr. Hughes left on the third day of the trip and Baily on the sixth day. S. N. Rhoads alone continued westward by railroad and wagon to Beaver Lake formerly Losee Pond and Wallkill Valley, Sussex County, where for two days he covered swamp and mountain with considerable success, carrying the number of breeding birds observed from 74 to 92, the highest mountains in these neighborhoods being of 1200 feet elevation. Mr. Rhoads paid another visit to Wallkill Valley early in August and found several additional species of much interest.

The comparative proportion of Canadian to Carolinian species deserves special comment. One might expect among this rugged mountainous region to find a reasonable number of more boreal birds, as the country is much like the Poconos in Pennsylvania and not much lower in elevation, but apparently it is just below the limit to attract these birds. The Black-throated Blue at Wawayanda Lake and a few Canadian Warblers, several on Wawayanda Lake and one or two at Greenwood Lake, were seen; then there were the Chestnut-sided Warbler and Black-

throated Green fairly common at several places. These with the Alder Flycatcher, Veery, Bobolink and Rose-breasted Grosbeak constituted the only species that would be regarded as "boreal" from the standpoint of the lower Delaware Valley and they are for the most part Alleghanian rather than Canadian. Such an uncommon species as the Golden-winged Warbler was met with in a number of places, and the Hooded Warbler was abundant. The Carolinian element even at the higher elevations was marked and we were surprised to find such species as the Chat, the Blue-wing and Worm-eating Warblers, and the Louisiana Water Thrush. Especially interesting was a colony of hundreds of Short-billed Marsh Wrens nesting in the Wallkill Valley lowlands, where Mr. Rhoads also found a marked Carolinian element.

1. *Colymbus auritus*, Horned Grebe, one individual, probably this species on Echo Lake.

2. *Ardea herodias*, Great Blue Heron, two, Wallkill Valley.

3. *Butorides virescens*, Great Heron, two, Echo Lake ; one, Beaver Lake.

4. *Rallus virginianus*, Virginia Rail, one, Wallkill Valley.

5. *Philohela minor*, Woodcock, one Greenwood Lake ; three, Wawayanda Lake.

6. *Actitis macularia*, Spotted Sandpiper, one, Echo Lake ; two, Wallkill Valley.

7. *Oxyechus vociferus*, Kildeer Plover, two, Wallkill Valley.

8. *Bonasa umbellus*, Ruffed Grouse, eight young with adult, Greenwood Lake ; one, Wawayanda Lake ; two, Echo Lake.

9. *Colinus virginianus*, Bobwhite, one, Echo Lake.

10. *Zenaidura macroura carolinensis*, Mourning Dove, one, Little Pond Greenwood ; two, Echo Lake.

11. *Circus hudsonius*, Marsh Hawk, one, Wallkill Valley.

12. *Accipiter velox*, Sharp-shinned Hawk, one, Beaver Lake.

13. *Accipiter cooperi*, Cooper's Hawk, one, Beaver Lake ; one, Wallkill Valley.

14. *Buteo borealis*, Red-tailed Hawk, two, Beaver Lake ; two, Wallkill Valley.

15. *Buteo platypterus*, Broad-winged Hawk, one, Greenwood Lake ; one, Wawayanda Lake.

16. *Haliaeetus leucocephalus*, Bald Eagle, two, Greenwood Lake.
17. *Falco sparverius*, Sparrow Hawk, one at Hamburg, Sussex County.
18. *Pandion h. carolinensis*, Osprey, one, Greenwood Lake.
19. *Coccyzus americanus*, Yellow-billed Cuckoo, one, Greenwood Lake.
20. *Coccyzus erythrophthalmus*, Black-billed Cuckoo, common; two nests, three or four eggs, fresh, at Greenwood Lake; several at Echo, Beaver and Wallkill.
21. *Ceryle alcyon*, Kingfisher, one, Echo Lake; two, Beaver Lake; two, Wallkill Valley.
22. *Dryobates villosus*, Hairy Woodpecker, nest Greenwood Lake, feeding young; two, Wallkill Valley; one, Wawayanda Lake.
23. *Dryobates pubescens medianus*, Downy Woodpecker, occasional; five, Wallkill Valley.
24. *Colaptes auratus luteus*, Flicker, common generally.
25. *Melanerpes erythrocephalus*, Red-headed Woodpecker, a few near Deckertown in August trip.
26. *Antrostomus vociferus*, Whip-poor-will, common Greenwood Lake, one nest, two eggs, fresh.
27. *Chordeiles virginianus*, Night Hawk, common Greenwood Lake.
28. *Chaetura pelagica*, Chimney Swift, abundant generally.
29. *Archilochus colubris*, Humming Bird, one, Wawayanda Lake.
30. *Tyrannus tyrannus*, King Bird, abundant generally.
31. *Myiarchus crinitus*, Crested Flycatcher, common generally.
32. *Sayornis phoebe*, Phoebe, abundant generally; nest and five eggs well incubated.
33. *Myiochanes virens*, Wood Pewee, common generally.
34. *Empidonax trailli alnorum*, Alder Flycatcher, several Greenwood Lake, one at Wawayanda Lake; all in alder swamps.
35. *Empidonax minimus*, Least Flycatcher, abundant generally; four eggs well incubated.

36. *Cyanocitta cristata*, Blue Jay, abundant Greenwood Lake, common elsewhere.

37. *Corvus brachyrhynchos*, Crow, only a few at each place.

38. *Dolichonyx oryzivorus*, Bobolink, two pairs Greenwood Lake, two pairs near Wawayanda Lake; abundant in Wallkill Valley, breeding both in upland and drowned lands.

39. *Molothrus ater*, Cowbird, two at Greenwood Lake, several Wallkill Valley.

40. *Agelaius phoeniceus*, Red-winged Blackbird, common Greenwood, abundant elsewhere.

41. *Sturnella magna*, Meadow Lark, common Greenwood Lake, sparing elsewhere.

42. *Icterus spurius*, Orchard Oriole, several Greenwood Lake, several Wallkill Valley.

43. *Icterus galbula*, Baltimore Oriole, common or abundant everywhere; two nests.

Sturnus vulgaris, English Starling, three in flock Greenwood Lake, several near Deckertown.

44. *Quiscalus quiscula (aeneus?)*, Purple Grackle, fairly common.

45. *Loxia curvirostra minor*, Red Crossbill, seven in pines near Wawayanda Lake.

46. *Astragalinus tristis*, Goldfinch, abundant generally.

47. *Poecetes gramineus*, Vesper Sparrow, fairly common generally, abundant at Wallkill Valley.

48. *Ammodramus sav. australis*, Grasshopper Sparrow, several Wallkill Valley only.

49. *Passerherbulus henslowi*, Henslow's Bunting, several in Wallkill Valley in August, young fledged and old still singing.

50. *Spizella passerina*, Chipping Sparrow, abundant; four eggs, incubated, 5th.

51. *Spizella pusilla*, Field Sparrow, abundant; four eggs, incubated, 8th.

52. *Melospiza melodia*, Song Sparrow, abundant; four young, one week old, 7th.

53. *Melospiza georgiana*, Swamp Sparrow, abundant; few each place; abundant Wallkill Valley.

54. *Pipilo erythrophthalmus*, Towhee, a few Greenwood and Wawayanda, abundant at Echo and Beaver Lakes.

55. *Zamelodia ludoviciana*, Rose-breasted Grosbeak, few generally, very abundant at Wallkill Valley.

56. *Passerina cyanea*, Indigobird, fairly common generally.

57. *Piranga erythromelas*, Scarlet Tanager, common at Greenwood Lake, four eggs, fresh; abundant at Beaver Lake and Wallkill Valley.

58. *Progne subis*, Purple Martin, several in the Wallkill Valley.

59. *Petrochelidon lunifrons*, Cliff Swallow, abundant or common throughout.

60. *Hirundo erythrogaster*, Barn Swallow, abundant generally, nest with eggs.

61. *Iridoprocne bicolor*, Tree Swallow, a few at Echo Lake, Beaver Lake and Wallkill Valley.

62. *Stelgidopteryx serripennis*, Rough-winged Swallow, one at Echo Lake and one in Wallkill Valley.

63. *Bombicilla cedrorum*, Cedar Bird, common; several flocks at Greenwood Lake.

64. *Vireosylvia olivacea*, Red-eyed Vireo, abundant everywhere; two nests found.

65. *Vireosylvia gilva*, Warbling Vireo, abundant in Wallkill Valley only.

66. *Lanivireo flavifrons*, Yellow-throated Vireo, fairly common everywhere.

67. *Vireo griseus*, White-eyed Vireo, five in the Wallkill Valley.

68. *Mniotilta varia*, Black-and-white Warbler, abundant at Greenwood Lake, feeding young; common at Wawayanda Lake and elsewhere.

69. *Helmitheros vermivorus*, Worm-eating Warbler, several pair at Greenwood and Echo Lakes; four incubated eggs at Greenwood on the eighth.

70. *Vermivora pinus*, Blue-winged Warbler, four pair at Greenwood, three at Echo Lake.

71. *Vermivora chrysoptera*, Golden-winged Warbler, several at each locality; five at Wallkill Valley.

72. *Compsothlypis americana usneae*, Parula Warbler, a few at Greenwood, Wawayanda, Echo and Beaver Lakes.

73. *Dendroica aestiva*, Yellow Warbler, common generally ; two young and two eggs at Greenwood Lake ; abundant at Wallkill Valley.

74. *Dendroica caerulescens*, Black-throated Blue Warbler, one male near small lake west of Wawayanda Lake.

75. *Dendroica pensylvanica*, Chestnut-sided Warbler, fairly common everywhere ; three fresh eggs at Greenwood ; Only one or two individual birds seen in Wallkill Valley.

76. *Dendroica virens*, Black-throated Green Warbler, two or three each at Greenwood, Wawayanda and Echo Lakes.

One bird heard singing in tree-top at Greenwood may have been a Blackburnian Warbler, but was not positively identified.

77. *Seiurus aurocapillus*, Ovenbird, abundant everywhere ; five nests with eggs and young.

78. *Seiurus motacilla*, Louisiana Water Thrush, common at Greenwood Lake ; two nests with eggs ; one seen at Wawayanda Lake, several at Echo Lake, Beaver Lake and in the Wallkill Valley.

79. *Geothlypis trichas*, Maryland Yellowthroat, abundant generally ; nest with fresh eggs.

80. *Icteria virens*, Yellow-breasted Chat, two at Greenwood Lake, one at Wawayanda Lake, several at Beaver Lake and Walkill Valley.

81. *Wilsonia citrina*, Hooded Warbler, abundant at Greenwood Lake, where a nest with fresh eggs was found, common at Wawayanda Lake and one at Echo Lake.

82. *Wilsonia canadensis*, Canadian Warbler, seen at Greenwood, Wawayanda and Beaver Lakes, several at each locality.

83. *Setophaga ruticilla*, Redstart, common in mountains everywhere ; fresh eggs at Greenwood Lake, a few in Wallkill Valley.

84. *Dumetella carolinensis*, Catbird, abundant, young birds about three days old in nest.

85. *Toxostoma rufum*, Brown Thrasher, occasional at all stations, abundant at Echo Lake, young six days old.

86. *Troglodytes aedon*, House Wren, not very common, except at Wallkill Valley where it was abundant.

87. *Cistothorus stellaris*, Short-billed Marsh Wren, abundant, breeding in the Wallkill Valley swamps ; large young found June 10, and one set of eggs on later visit in August.

88. *Telmatodytes palustris*, Long-billed Marsh Wren, a few in the Wallkill Valley, Cattail Swamp in August.

89. *Sitta carolinensis*, White-breasted Nuthatch, three in Wallkill Valley.

90. *Penthestes atricapillus*, Black-capped Chickadee, a few at each locality.

91. *Hylocichla mustelina*, Wood Thrush, abundant generally, several nests.

92. *Hylocichla fuscescens*, Veery, several at each locality.

93. *Planesticus migratorius*, Robin, abundant everywhere.

94. *Sialia sialis*, Bluebird, fairly common at Greenwood Lake, few elsewhere.

Report on the Spring Migration of 1909

COMPILED BY WITMER STONE

Every year adds to the value of our migration record and makes it all the more important that our observers should continue to send in their reports. We started in 1901 with five stations and next year increased our corps to 42. Since then we have had in successive years 45, 54, 60, 50, 63, 56 and in 1909, 45. We sincerely thank those who have carried on this work in the past and earnestly urge them to continue it. We also request our observation corps to send in the names of any of their friends who are capable and willing to co-operate in the work. Blank schedules will be furnished upon application to Mr. Alfred C. Redfield, Wayne, Pa., who superintends the work of the migration corps.

New Jersey.

Cape May, H. Walker Hand.
Vineland, Miss Alice K. Prince.
Downtown (near Newfield), W. W. Fair.
Yardville, Rachael E. Allinson.
Trenton, C. C. and R. M. Abbott.
Bordentown, Minnie V. Flynn.
Beverly, J. Fletcher Street.
Rancocas, Emily Haines and Frances B. Stokes.
Moorestown, Anna A. Mickle.
Pitman, S. B. Haines.
Pensauken, C. J. Hunt.
Camden, Julian K. Potter.

Pennsylvania.

Kennett Square, Charles J. Pennock.
West Chester, Thos. H. Jackson.
Concordville, Mrs. K. R. Styer and Miss E. P. Styer.

Concordville, C. Hayburn Jones.
Swarthmore, David E. Harrower.
Lansdowne, John D. Carter.
Lansdowne, Louisa M. Jacob.
Lansdowne, Marion A. Honsaker.
Lansdowne, Miss Ethel A. Shrigley.
Lansdowne, Friends' School.
Collingdale, Paul L. Lorrilliere.
Media, Lydia G. Allen.
Media, Edith L. Palmer.
Ardmore, Wm. L. Baily.
Haverford, Wm. J. Serrill.
Wayne, Alfred C. Redfield.
Wayne, L. S. Pearson.
Wayne, Edwin B. Bartram.
Wayne, Miss Mary K. Baker.
Bryn Mawr, Emily H. Thomas.
West Philadelphia, Thos. R. Hill.
West Fairmount Park, Elmer Onderdonk.
Wissahickon, John R. Pickering, Jr.
Germantown, Miriam F. Solis-Cohen.
Olney, George S. Morris.
Oak Lane, John W. Allen.
Melrose, Samuel H. Barker.
Frankford, Richard F. Miller.
Fox Chase, Alexander Patman.
Holmesburg, Henry W. Fowler.
George School, Jesse E. Packer.
Easton, Edw. J. F. Marx.
Perkasie, Albert C. Rutter.
Columbia, Wm. F. Rochow.
Marietta, W. H. Buller.
Lopez, Otto Behr.

In the vicinity of Philadelphia the spring migration of 1909 was for the most part nearly normal. The mild weather in February, especially from the 12th to the 16th, brought the earliest migrants much earlier than usual. The bulk arrival of Grackles on February 15, was fifteen days earlier than the aver-

age for the previous seven years, that of the Bluebird on February 16, was thirteen days early, of the Robin February 20, eleven days early and of the Fox Sparrow February 21, fifteen days early.

The early March migrants, the Red-winged Blackbird, Flicker, Meadow Lark, Killdeer, arrived in bulk from five to eleven days earlier than the average, while the Cowbird, Field Sparrow, Vesper Sparrow and Chipping Sparrow, arriving in bulk March 27 to April 7, were from four to eight days later than the average. The majority of the fifty most common April and May migrants were remarkably regular. The date of bulk arrival in eight species coincided with the average of the previous seven years, in twenty species it varied by only a day, in twelve it varied by two days, in six by three days and in four from four to six days.

*List of Other Species Reported by Observers During 1909, and
Additional Notes. Winter Notes Refer to Winter of
1908-9. Localities are in Pennsylvania
Unless Otherwise Indicated.*

Podilymbus podiceps, Pied-billed Grebe. Pair at George School, April 11 (*Packer*) ; Wayne one April 12 (*Pearson*).

Gavia immer, Loon. Camden, N. J., May 8 (*Potter*) ; one caught at Kennett, May 30 (*Pennock*) ; Cape May, Feb. 3 (*Hand*).

Larus argentatus, Herring Gull. Frankford, on river, September 24-May 10 (*Miller*) ; mouth of Maurice River, N. J., May 20 (*Prince*).

Larus philadelphia, Bonaparte's Gull. Richmond, Feb. 27 (*Miller*).

Phalacrocorax dilophus, Double-crested Cormorant. Cape May, N. J., April 22 (*Hand*).

Mergus americanus, Merganser. Richmond, April 16-May 15 (*Miller*) ; Tinicum, one shot Feb. 22 (*Pearson*) ; Buckshutem, N. J., one shot Dec. 3, 1908 (*Prince*).

Mergus serrator, Red-breasted Merganser. Richmond, Jan. 25 (*Miller*).

Anas platyrhynchos, Mallard. Tinicum, one shot Feb. 22 (*Pearson*).

Anas rubripes, Black Duck. Richmond, March 8 (*Miller*) ; Cape May, N. J., nest with eggs April 11 (*Hand*) ; Tinicum, several shot Feb. 27, March 26-27 (*Redfield*).

Querquedula discors, Blue-winged Teal. Three near Audubon on Perkiomen Creek, Sept. 26, 1908 (*Pearson*) ; Bridesburg, Feb. 20 (*Miller*).

Dafila acuta, Pintail. Tinicum, abundant Feb. 27, two March 27 (*Redfield*).

Aix sponsa, Wood Duck. Cape May, N. J., flock of 18, May 19 (*Hand*).

Marila marila, Scaup Duck. Buckshutem, N. J., one shot Nov. 4, 1908 (*Prince*).

Marila affinis, Lesser Scaup. Richmond, February 9 and April 16 (*Miller*) ; Wayne, one shot Nov. 7, 1908 (*Redfield*).

Harelda hyemalis, Old Squaw. Buckshutem, N. J., one shot Jan. 15 (*Prince*).

Erismatura jamaicensis, Ruddy Duck. Tinicum, May 26, one shot (*Redfield*) ; Buckshutem, N. J., one shot Nov. 4, 1908 (*Prince*).

Branta canadensis, Canada Goose. Two on Maurice River at Buckshutem, N. J., May 20 (*Prince*) ; going north at Cape May, N. J., Feb. 3, 8, 13, 21 (*Hand*).

Botaurus lentiginosus, American Bittern. Holmesburg, May 6 (*Miller*) ; Camden, N. J., April 27 (*Potter*) ; near Concordville, April 11 (*Styer*) ; Cape May, N. J., three on April 6 (*Hand*).

Ixobrychus exilis, Least Bittern. Richmond, May 8 (*Miller*) ; Pensauken, N. J., April 24 (*Hunt*) ; Berwyn, nest with eggs June 12, bird seen June 6 (*Pearson*).

Ardea herodias, Great Blue Heron. Frankford, March 14 (*Miller*) ; Camden, N. J., March 30 (*Potter*).

Herodias egretta, White Egret. One seen for a week near Concordville, Aug. 11 (*Styer*).

Florida caerulea, Little Blue Heron. Cape May, N. J., Aug. 1-end Sept., 1908 (*Hand*).

Rallus virginianus, Virginia Rail. Pensauken, N. J., April 11 (*Hunt*).

Porzana carolina, Sora Rail. Bridesburg, May 6 (*Miller*).

Gallinula galeata, Florida Gallinule. Arr. Richmond, April 16 (*Miller*).

Ionornis martinica, Purple Gallinule. Cape May, N. J., one shot July 7 (*Hand*).

Fulica americana, Coot. Richmond, Feb. 22 and April 3 (*Miller*) ; Camden, N. J., April 24 (*Potter*).

Phalaropus fulicarius, Red Phalarope. Cape May, N. J., May 3 (*Hand*).

Steganopus tricolor, Wilson's Phalarope, Cape May, N. J., one shot May 3 (*Hand*).

Philohela minor, Woodcock. Frankford, March 30 and Pensauken, N. J., May 20 (*Miller*) ; Lansdowne, March 30 (*Jacob*) ; Easton, Sept. 19, 1908 (*Marx*) ; large flight at Cape May, N. J., Nov. 4-7, 1908, some wintered, spring flight March 8, nest with eggs April 5, hatched April 8 (*Hand*) ; Germantown, March 13 (*S. Brown*).

Gallinago delicata, Wilson's Snipe. Richmond, March 10 and Pensauken, N. J., April 13 (*Miller*) ; Cape May, N. J., March 20 and April 11 (*Hand*) ; Tinicum, March 27 (*Pearson*).

Tringa canutus, Knot. Cape May, N. J., large flocks June 21-25 (*Hand*).

Pisobia minutilla, Least Sandpiper. Richmond, May 20-28 (*Miller*).

Calidris arenaria, Sanderling. Cape May, N. J., one shot May 4 (*Hand*).

Totanus melanoleucus, Great Yellowlegs. Richmond, May 11 (*Miller*) ; Pensauken, N. J., May 9 (*Hunt*) ; Camden, N. J., May 22 (*Potter*) ; Cape May, March 21 abundant, April 25 (*Hand*).

Bartramia longicauda, Field Plover. Richmond, April 21 (*Miller*).

Numenius hudsonicus, Hudsonian Curlew. Cape May, April 16, flock 250 (*Hand*).

Aegialitis semipalmatus, Semipalmated Plover. Richmond, May 23-28 (*Miller*) ; Cape May, N. J., May 2 (*Hand*).

Squatarola squatarola, Black-bellied Plover. Cape May, April 21 (*Hand*).

Arenaria interpres, Turnstone. Cape May, May 2, large flocks June 21-25 (*Hand*).

Colinus virginianus, Quail. Ardmore, May 7 (*Baily*).

Zenaidura macroura carolinensis, Mourning Dove. Two wintered at Concordville (*Styer*); had eggs at Pensauken, N. J., April 11 (*Hunt*).

Astur atricapillus, Goshawk. West Chester, Feb. 7, one seen (*Jackson*).

Buteo platypterus, Broad-winged Hawk. Nest and eggs Wayne, May 23 (*Redfield*).

Archibuteo lagopus sancti-johannis, Rough-legged Hawk. Bridesburg, Dec. 25, 1908 and Feb. 4 (*Miller*); Tinicum, April 18 (*Redfield*); West Creek, N. J., March 8, one shot (*Rehn*).

Haliaeetus leucocephalus, Bald Eagle. Cape May, N. J., two on April 1 (*Hand*),

Falco columbarius, Pigeon Hawk. One shot October 21, 1908, Buckshutem, N. J., (*Prince*).

Aluco flammea, Barn Owl. George School, Dec. 27, 1908 (*Packer*).

Asio wilsonianus, Long-eared Owl. Pensauken, N. J., April 13 (*Miller*).

Sphyrapicus varius, Yellow-billed Sapsucker. Wayne, Oct. 11, 1908 (*Bartram*); Easton, one seen Dec. 3, 28, 1908 and May 24, 1909 (*Marx*).

Centurus carolinus, Red-bellied Woodpecker. Crum Creek, one seen March 15 (*Baily*).

Chordeiles virginianus, Nighthawk. Moorestown, N. J., Sept. 12, 1908 (*Mickle*).

Nuttallornis borealis, Olive-sided Flycatcher. Arrived at Lopez, May 31 (*Behr*).

Sayornis phoebe, Phoebe. George School, November 21, 1908 (*Packer*).

Empidonax minimus, Least Flycatcher. One bird apparently settled for the summer near Moore's, Delaware County, June 13 (*Carter*).

Otocoris alpestris, Horned Lark. Five near Cheney, Chester County, Feb. 12 (*Fowler*); frequent during winter of 1908-1909 at Olney (*Morris*); George School, Dec. 27, 1908 (*Packer*); Easton, flocks Feb. 13, 19, March 6 (*Marx*).

Corvus corax principalis, Raven. Cape May, N. J., one on meadows Nov. 8, 1908 (*Hand*).

Corvus brachyrhynchos, Crow. Had young April 19 (*Miller*).
Corvus ossifragus, Fish Crow. Holmesburg, May 13 (*Fowler*).
Sturnus vulgaris, Starling. George School, one bird on March 12 and April 16 first seen in neighborhood (*Packer*).

Euphagus carolinus, Rusty Blackbird. Tinicum, Feb. 27 (*Pearson*); Princeton, N. J., thirty April 3 (*Redfield*).

Carpodacus purpureus, Purple Finch. Unusually abundant during winter at Olney, 1908-1909 (*Morris*); last at Bustleton, April 24 (*Miller*); last seen at Camden, N. J., April 28 (*Potter*); Easton, Sept. 7-Nov. 14, 1908 and April 17-May 15, one on Dec. 25, 1908 (*Marx*); Wayne, Feb. 22-May 11 (*Redfield*).

Loxia curvirostra minor, Red Crossbill. Swarthmore, Dec. 26, 1908 (*Harrower*); Media, one March 7 (*Allen*); Concordville, Nov. 16 (*Styer*); Bristol, March 12 (*Abbott*); Easton, Nov. 27, 29, Dec. 20, 28, 1908, Feb. 7 and 18 (*Marx*).

Loxia leucoptera, White-winged Crossbill. Cape May, N. J., one killed Feb. 5 (*Hand*).

Acanthis linaria, Redpoll. George School, February 1, flock of 20 feeding on ragweed seeds (*Packer*); very common at Lopez, Oct. 15-April 7 (*Behr*); Easton, March 6 a flock (*Marx*); Wayne, flocks March 6-7 (*Pearson* and *Redfield*); Mt. Pocono, March 28 (*Baily*).

Spinus pinus, Pine Siskin. Last seen May 6, Frankford, usually common (*Miller*); Morristown, N. J., Dec. 25, 1908 and April 24-May 9 (*Mickle*); Lansdowne, small flocks January-April 23 (*Carter*); Concordville, Jan. 11 to April 29 in flocks and one on May 16 (*Styer*); Kennett, April 24-30 (*Pennock*); West Chester, unusually abundant Feb. 21-April 19, one on May 2 (*Jackson*); Marietta in January (*Buller*); Easton, Nov. 27-Dec. 19, 28, 1908 and then Feb. 18-early May (*Marx*); Wayne, March 5-May 7 common (*Redfield*); Tinicum, Jan. 23-April 18 (*Redfield*).

Poæetes gramineus, Vesper Sparrow. Wayne, several Dec. 20 and 21 (*Redfield*); Easton, one Nov. 26, 1908 (*Marx*).

Passerherbulus henslowi, Henslow's Sparrow. Bucksutem, N. J., May 6 (*Prince*).

Zonotrichia albicollis, White-throated Sparrow. Holmesburg, last seen April 30 (*Fowler*); Moorestown, N. J., Oct. 10, 1908-

May 7 (*Mickle*) ; last seen Camden, N. J., May 6 (*Potter*) ; Media, May 13 (*Allen*) ; Woodland Cemetery, May 4 (*Hill*) ; Concordville, May 18 (*Styer*) ; Easton, Sept. 19–May 14 and one on May 31 (*Marx*) ; Wayne, May 12 (*Redfield*) ; arrived Lopez, April 17 (*Behr*).

Zonotrichia leucophrys, White-crowned Sparrow. Bridesburg, May 14 (*Miller*) ; Haverford, May 16 (*Serrill*) ; Concordville, May 15 (*Styer*) ; Wayne, May 16 (*Pearson*), Easton, May 8 and 14 (*Marx*).

Spizella monticola, Tree Sparrow. Last seen at Moorestown, N. J., April 4 (*Mickle*) ; Media, April 11 (*Palmer*) ; Easton, Nov. 21–March 24 (*Marx*) ; Lopez, Oct. 15–April 3 (*Behr*) ; Wayne, Nov. 17–March 20 (*Redfield*).

Spizella pusilla, Field Sparrow. One at Easton, Jan. 9 (*Marx*).

Junco hyemalis, Junco. Moorestown, N. J., November 1, 1908–April 4 (*Mickle*) ; last seen Camden, N. J., April 25 (*Potter*) ; Media, May 2 (*Palmer*) ; Germantown, April 17 (*Solis-Cohen*) ; Oak Lane, April 30 (*Allen*) ; Concordville, April 28 (*Styer*) ; arrived Fairmount Park, Oct. 21, 1908 (*Onderdonk*) ; George School, Sept. 25, 1908 (*Packer*) ; Marietta, Oct. 10, 1908 (*Buller*) ; Downstown, N. J., last seen May 2 (*Fair*) ; Vineland, N. J., Oct. 22–April 2 (*Prince*) ; Rancocas, N. J., Oct. 11 (*Haines*) ; Bordentown, N. J., Sept. 25–April 22 (*Flynn*) ; Perkasië, May 4 (*Rutter*) ; Yardville, Oct. 16–May 2 (*Allinson*) ; Wayne, Oct. 4–April 25 (*Baker*) ; Easton, Oct. 3–May 4 (*Marx*) ; Wayne, May 1 (*Redfield*).

Passerella iliaca, Fox Sparrow. Last seen Wayne, March 29 (*Redfield*).

Zamelodia ludoviciana, Rose-breasted Grosbeak. One seen and heard near Rancocas, July 16, 1908 (*Haines*).

Lanius ludovicianus migrans, Migrant Shrike. Audubon, Pa., Sept. 26, 1908 (*Pearson*).

Compsothlypis americana usneæ, Parula Warbler. Easton, one Oct. 10, 1908 (*Marx*).

Protonotaria citrea, Prothonotary Warbler. One seen and heard at Lansdowne, May 12 (*Carter*). [Mr. Carter's description of song and bird leaves no doubt in my mind as to the correctness of his identification, W. S.]

Vermivora chrysoptera, Golden-winged Warbler. Easton, May 7, 8 and 12 (*Marx*); Wayne, May 8 (*Redfield*).

Vermivora rubricapilla, Nashville Warbler. Haverford, May 9 (*Serrill*); Buckshutem, N. J., May 8 (*Prince*); Rancocas, N. J., May 11 (*Haines*); Easton, May 8 and 9 (*Marx*); Wayne, May 8 (*Redfield*).

Vermivora peregrina, Tennessee Warbler. Concordville, one May 18-25 (*Styer*).

Dendroica tigrina, Cape May Warbler. Trenton, May 15 (*Abbott*).

Dendroica coronata, Myrtle Warbler. Easton, one Nov. 6, 1908 (*Marx*).

Dendroica castanea, Bay-breasted Warbler. Common at Wayne, May 16-25 (*Redfield*); Bryn Mawr, May 24 (*Thomas*); Moorestown, N. J., May 11 (*Mickle*); George School, May 15 (*Packer*); Rancocas, N. J., May 15 (*Haines*); Trenton, N. J., May 11 (*Abbott*); Wayne, May 16 (*Pearson*).

Dendroica striata, Black-poll Warbler. Last seen at Concordville, June 2 (*Styer*).

Seiurus motacilla, Louisiana Water Thrush. Wissahickon Creek, May 15 (*Miller*); Kennett, Pa., April 19 one shot (*Pennock*).

Oporornis philadelphia, Mourning Warbler. Lansdowne, June 11 and 12 (*Carter*); Trenton, May 14 (*Abbott*).

Wilsonia pusilla, Wilson's Warbler. Trenton, May 15 several (*Abbott*); Easton, May 14 (*Marx*).

Wilsonia citrea, Hooded Warbler. Haverford, May 3 (*Serrill*); Moorestown, N. J., May 3 (*Mickle*); Berwyn, May 4 and 12 (*Redfield*).

Setophaga ruticilla, Redstart. Last seen at Concordville, May 30 (*Styer*).

Anthus rubescens, Titlark. Concordville, large flock March 24 (*Styer*); Tinicum, flock March 27 (*Pearson*).

Thryothorus ludovicianus, Carolina Wren. Unusually common in winter at Frankford (*Miller*).

Nannus hiemalis, Winter Wren. Frankford, Sept. 18-May 3 (*Miller*); last seen Media, April 14 (*Allen*); Woodland Cemetery, May 2 (*Hill*); Easton, Sep. 26-March 27 (*Marx*);

Wayne, April 24 (*Redfield*) ; arrived at George School, Sept. 26 (*Packer*) ; Wayne, Sep. 27 (*Baker*).

Certhia familiaris americana, Brown Creeper. Oct. 5-April 12, Frankford (*Miller*) ; arrived George School, Oct. 10 (*Packer*) ; last seen Perkasio, April 22 (*Rutter*) ; Easton, Oct. 8-Dec. 23, 1908 (*Marx*) ; Fairmount Park, arrived Oct. 10 (*Onderdonk*) ; Wayne, Oct. 3-April 15 (*Baker*).

Parus carolinensis, Carolina Chickadee. Wayne; one shot March 1st at Berwyn; one was seen repeatedly during May (*Redfield*).

Regulus satrapa, Golden-crowned Kinglet. Frankford, Sept. 21-April 13 (*Miller*) ; last seen April 19, Concordville (*Styer*) ; Wayne, Oct. 3 (*Baker*) ; Easton, Oct. 3-April 9 (*Marx*) ; Wayne, April 12 (*Redfield*).

Planesticus migratorius, Robin. Last seen at Easton, Nov. 2, 1908; individuals on Dec. 19, 25, 28, Jan 6 (*Marx*).

NAME.	Moorestown, N. J.	N. 1; E. 12.1	Pensaunkent, N. J.	N. 0; E. 8.	Camden, N. J.	N. 0; E. 2.	Media, Pa.	S. 2; W. 12.	Swarthmore, Pa.	S. 3; W. 10.	Collingdale, Pa.	S. 3; W. 6.	Lansdowne, Pa.	S. 1; W. 6.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	German town,	Oak Lane and Melrose, Pa.	Fox Chase, Phila.	N. 9; E. 4.	Holmesburg, Phila.	N. 6; E. 1.	Frankford, Phila.	N. 5; E. 5.	Olney, Phila.	N. 6; E. 3.	Bulk Artrial Phila., 1909.	
Canada Goose	May 2	May 2	May 2	May 2	Apr. 13	May 14	Mar. 10	Mar. 29	S. 3; W. 10.	S. 3; W. 6.	S. 3; W. 6.	S. 1; W. 6.	S. 1; W. 6.	S. 1; W. 6.	May 2	May 2	May 9	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	
Green Heron	Apr. 4	Apr. 4	Apr. 17	Apr. 17	Apr. 17	May 16	May 16	May 3	Apr. 25	Apr. 9	Apr. 9	Apr. 30	Apr. 30	Apr. 30	May 16	May 16	May 16	Apr. 7	Apr. 25	Apr. 11	May 5	May 5	May 5	May 5	May 5	May 5	May 5	May 5	May 5	
Night Heron	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2
Spotted Sandpiper	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2
Solitary Sandpiper	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	
Killdeer	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21
Dove	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25
Osprey	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21
Turkey Vulture	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21	Feb. 21
Yellow-billed Cuckoo	May 11	May 11	May 11	May 11	May 11	May 16	May 23	May 15	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6
Black-billed Cuckoo	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 30	Apr. 10	Mar. 24	Mar. 24	Mar. 24	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Mar. 26
Kingfisher	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 11	Mar. 29	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Yellow-bellied Sapsucker	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 11	Mar. 29	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Red-headed Woodpecker	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 11	Mar. 29	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Flicker	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 11	Mar. 29	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8	May 8
Whip-poor-will	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7	Apr. 7
Nighthawk	Apr. 23	Apr. 23	Apr. 23	Apr. 23	Apr. 23	Apr. 23	Apr. 18	Apr. 18	Apr. 18	Apr. 18	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24	Apr. 24
Chimney Swift	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2
Hummingbird	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11
Kingbird	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3
Great-crested Flycatcher	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4
Phoebe	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4	Apr. 4

* The relative positions of the stations are indicated by the number of miles, N. or S. and E. or W., that each one is distant from Philadelphia, Pa., i. e., its latitude and longitude with reference to the City Hall.

* Next March 11.

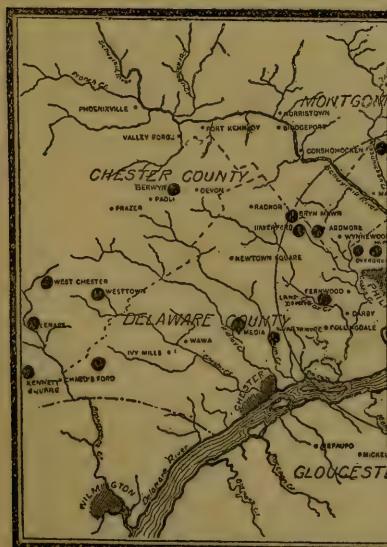
NAME.	Moorestown, N. J.	Pensauken, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Germanstown, Phila.	Oak Lane and Melrose, Pa.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival Phila., 1909.
Wood Pewee	May 6	May 15	May 16	May 12	May 12	. . .	May 17	May 15	. . .	Mar. 12	. . .	. . .	May 2	May 7	. . .	May 11	. . .	May 12
Acadian Flycatcher . . . . .	. . .	. . .	. . .	. . .	May 6	. . .	May 6	May 6	. . .	May 19	. . .	May 1	May 25	. . .	May 6	May 15	. . .	. . .
Least Flycatcher . . . . .	. . .	. . .	. . .	. . .	May 15	. . .	May 13	May 8	. . .	May 21	. . .	May 7	. . .	May 7	. . .	May 15	. . .	May 9
Bobolink . . . . .	. . .	. . .	. . .	May 6	May 9	. . .	. . .	May 8	. . .	May 7	May 4	. . .	. . .	May 12	. . .	May 12	. . .	May 27
Cowbird . . . . .	. . .	Apr. 30	Mar. 12	Mar. 27	Feb. 26	. . .	Apr. 12	Apr. 4	. . .	Feb. 24	May 4	. . .	Apr. 2	Mar. 30	. . .	Mar. 26	Apr. 20	Mar. 27
Red-winged Blackbird	Mar. 2	Feb. 20	Mar. 20	Mar. 18	Feb. 15	Mar. 20	Mar. 14	Feb. 12	. . .	. . .	Mar. 19	. . .	Mar. 10	Mar. 15	. . .	Mar. 12	Feb. 28	Mar. 2
Meadow Lark	Res.	Mar. 4	Res.	Feb. 22	Res.	Feb. 14	Mar. 6	Res.	May 9	Feb. 24	. . .	. . .	Res.	Mar. 10	. . .	Res.	Feb. 28	Mar. 2
Orchard Oriole	May 5	May 8	May 5	May 4	May 9	. . .	May 6	May 6	. . .	May 6	. . .	. . .	. . .	May 1	May 3	May 3	Res.	Mar. 4
Baltimore Oriole	May 6	May 8	May 5	May 4	May 7	May 6	May 6	May 6	May 12	May 4	. . .	. . .	May 25	May 10	May 6	May 4	. . .	May 5
Rusty Blackbird	Mar. 21	Mar. 20	Mar. 20	Feb. 13	Mar. 11	May 4	May 4	Res.	May 12	May 4	. . .	. . .	May 5	Mar. 27	May 3	May 4	. . .	May 6
Purple Grackle	Feb. 16	Feb. 30	Mar. 20	Feb. 13	Feb. 15	Feb. 14	Feb. 12	Feb. 12	Feb. 16	Feb. 2	Feb. 24	Feb. 27	Feb. 12	Mar. 11	Feb. 15	Feb. 5	Mar. 14	Feb. 15
Vesper Sparrow	Apr. 11	Apr. 17	Apr. 3	Apr. 3	Apr. 3	Apr. 2	Apr. 6	Mar. 27	. . .	Mar. 31	. . .	. . .	Apr. 25	Mar. 23	. . .	Mar. 10	Mar. 19	Apr. 2
Savanna Sparrow . . . . .	. . .	. . .	Apr. 18	. . .	Apr. 1	. . .	. . .	Apr. 11	. . .	Mar. 20	. . .	. . .	May 2	. . .	. . .	Feb. 20	Feb. 20	. . .
Grasshopper Sparrow	May 2	. . .	May 6	Apr. 25	Apr. 23	Apr. 18	. . .	May 9	. . .	Apr. 25	. . .	. . .	Apr. 25	. . .	. . .	May 15	. . .	Apr. 25
Chipping Sparrow	Apr. 7	Apr. 17	Apr. 4	Apr. 7	Apr. 3	Apr. 11	Apr. 7	Apr. 8	Mar. 20	Apr. 6	Apr. 1	Apr. 11	Apr. 2	Mar. 27	. . .	Apr. 6	Apr. 7	. . .
Field Sparrow	Apr. 18	Mar. 20	Feb. 22	Apr. 3	Res.	Mar. 28	Apr. 1	Feb. 14	. . .	Mar. 20	Mar. 19	Apr. 16	Apr. 2	Mar. 27	Apr. 2	Res.	Mar. 19	Mar. 27
Swamp Sparrow	Apr. 25	Mar. 21	Feb. 22	. . .	Apr. 11	. . .	Apr. 9	Apr. 9	. . .	Apr. 8	May 4	. . .	May 2	Mar. 27	. . .	Mar. 10	Feb. 19	Feb. 21
Fox Sparrow	Mar. 21	Mar. 21	Feb. 16	Mar. 14	Feb. 16	Mar. 20	Feb. 21	Feb. 21	Mar. 9	Apr. 18	Apr. 25	Apr. 26	Apr. 25	. . .	. . .	Feb. 19	Feb. 24	Feb. 21
Chewink	Apr. 18	Apr. 17	Apr. 21	Apr. 17	Apr. 16	Apr. 25	Apr. 13	Apr. 17	Apr. 26	Apr. 18	Apr. 25	Apr. 26	Apr. 25	. . .	. . .	Apr. 25	Apr. 21	Apr. 18
Rose-breasted Grosbeak	May 8	. . .	May 16	. . .	May 9	May 8	May 4	May 9	. . .	May 8	. . .	May 6	May 16	. . .	. . .	May 11	May 4	May 8
Indigobird	May 7	May 17	May 8	May 8	May 9	May 8	May 7	May 9	May 4	May 8	. . .	May 6	May 16	May 10	. . .	May 6	. . .	May 8
Scarlet Tanager	May 7	May 15	May 8	May 4	May 6	. . .	May 7	May 6	May 4	May 6	. . .	. . .	May 9	May 7	May 12	May 6	. . .	May 7
Purple Martin	Apr. 6	. . .	. . .	. . .	May 9	. . .	. . .	. . .	May 4	. . .	. . .	. . .	. . .	. . .	. . .	Apr. 19	. . .	. . .

NAME.	Moorestown, N. J.	Pensauken, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Germantown, Phila.	Oak Lane and Melrose, Pa.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival Phila., 1909.
Cliff Swallow	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2	May 2
Barn Swallow	Apr. 25	Apr. 24	Apr. 22	Apr. 25	Apr. 18	Apr. 24	Apr. 25	Apr. 22	Apr. 22	Apr. 17	Apr. 17	Apr. 17	Apr. 17	Apr. 17	Apr. 17	Apr. 17	Apr. 17	Apr. 17
Tree Swallow	May 2	Apr. 11	Apr. 22	May 2	Apr. 12	Apr. 21	Apr. 25	Apr. 24	Apr. 24	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9
Bank Swallow	May 2	Apr. 24	May 1	May 2	Apr. 18	Apr. 9	Apr. 25	Apr. 24	Apr. 24	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9	Apr. 9
Rough-winged Swallow	May 2	Apr. 15	May 1	May 2	Apr. 10	Apr. 22	May 19	May 23	May 15	Apr. 22	Apr. 22	May 7	May 29	May 10	May 10	Apr. 13	Apr. 13	Apr. 13
Cedarbird	May 2	Apr. 23	May 16	May 11	May 7	May 10	May 7	May 6	May 10	May 3	May 3	May 3	May 8	May 10	May 10	May 6	May 6	May 6
Red-eyed Vireo	May 6	May 17	May 11	May 7	May 7	May 10	May 7	May 6	May 10	May 3	May 3	May 3	May 8	May 10	May 10	May 6	May 6	May 6
Warbling Vireo	Apr. 26	May 10	May 23	May 6	May 6	May 6	May 8	May 16	May 16	May 7	May 7	May 7	May 8	May 10	May 10	May 11	May 11	May 11
Yellow-throated Vireo	May 3	May 3	May 8	May 2	May 2	May 2	May 4	May 3	May 3	May 6	May 6	May 6	May 4	May 10	May 10	May 11	May 11	May 11
Solitary Vireo	May 7	May 2	May 1	May 1	Apr. 25	May 2	Apr. 18	May 3	May 3	Apr. 25	May 4	May 4	May 4	May 10	May 10	May 11	May 11	May 11
White-eyed Vireo	May 7	May 2	May 2	May 2	May 2	May 2	May 5	May 4	May 4	May 1	May 1	May 1	Apr. 25	May 1	May 1	May 3	May 3	May 3
Black and White Warbler	Apr. 18	Apr. 25	Apr. 27	Apr. 26	Apr. 25	May 2	Apr. 26	May 1	May 1	Apr. 24	Apr. 30	Apr. 22	Apr. 25	May 1	May 1	May 2	Apr. 26	Apr. 27
Worm-eating Warbler	May 7	May 2	May 2	May 2	May 2	May 2	May 8	May 9	May 9	May 6	May 6	May 6	May 2	May 2	May 2	May 2	May 2	May 2
Blue-winged Warbler	May 6	May 15	May 1	May 3	May 3	May 3	May 4	May 3	May 4	May 7	May 7	May 7	May 2	May 2	May 2	May 6	May 6	May 6
Parula Warbler	Apr. 19	Apr. 25	Apr. 27	May 2	May 1	May 1	May 1	May 4	May 4	May 6	May 6	May 6	May 2	May 2	May 2	May 6	May 6	May 6
Yellow Warbler	May 8	May 8	May 8	May 4	May 2	May 2	May 4	May 4	May 4	May 6	May 6	May 6	May 2	May 2	May 2	May 6	May 6	May 6
Black-throated Blue Warbler	May 2	Apr. 25	Apr. 17	Apr. 18	Apr. 18	May 2	Apr. 21	Apr. 10	May 4	Apr. 17	Apr. 17	May 1	May 2	May 2	May 2	May 4	May 4	May 4
Myrtle Warbler	May 8	May 8	May 9	May 9	May 9	May 9	May 7	May 6	May 4	May 8	May 8	May 1	May 2	May 2	May 2	May 11	May 11	May 11
Magnolia Warbler	May 7	May 19	May 11	May 12	May 3	May 3	May 4	May 6	May 4	May 6	May 6	May 23	May 16	May 16	May 16	May 11	May 11	May 11
Chestnut-sided Warbler	May 8	May 19	May 11	May 13	May 9	May 9	May 9	May 7	May 4	May 8	May 8	May 23	May 16	May 16	May 16	May 11	May 11	May 11
Black-poll Warbler	May 7	May 7	May 6	May 12	May 9	May 9	May 4	May 4	May 4	May 6	May 6	May 23	May 16	May 16	May 16	May 11	May 11	May 11
Blackburnian Warbler	May 6	May 6	May 1	May 2	May 2	May 2	May 3	May 2	May 2	Apr. 30	Apr. 30	May 2	May 2	May 2	May 2	May 11	May 11	May 11
Black-throated Green Warbler	May 6	May 6	May 1	May 2	May 2	May 2	May 3	May 2	May 2	Apr. 30	Apr. 30	May 2	May 2	May 2	May 2	May 15	May 15	May 15

NAME.	Moorestown, N. J.	Pensauken, N.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingsdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philadelphia.	Germanstown, Phila.	Oak Lane and Melrose, Pa.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival at Phila., 1909.
Pine Warbler	May 8	. . .	Apr. 17	. . .	. . .	. . .	. . .	Apr. 17	. . .	. . .	. . .	. . .	. . .	. . .	. . .	Apr. 17	Apr. 29	Apr. 17
Yellow Palm Warbler . . . . .	. . .	. . .	Apr. 18	Apr. 25	Apr. 22	May 2	May 4	Apr. 9	May 1	Apr. 15	. . .	. . .	. . .	. . .	. . .	Apr. 28	May 2	May 1
Prairie Warbler	May 6	. . .	. . .	May 5	May 5	May 5	May 13	May 13	May 1	May 1	May 2	May 2	May 2	Apr. 30	. . .	Apr. 27	May 2	May 1
Ovenbird	May 3	May 1	Apr. 28	May 4	Apr. 25	May 2	Apr. 23	Apr. 23	May 1	May 1	May 2	May 2	May 8	. . .	. . .	Apr. 28	. . .	May 1
Water Thrush . . . . .	. . .	May 23	May 8	May 2	Apr. 25	. . .	May 4	May 1	. . .	May 2	. . .	. . .	May 8	. . .	. . .	May 11	. . .	May 6
Kentucky Warbler . . . . .	. . .	. . .	. . .	May 9	May 3	. . .	May 7	May 6	May 4	May 2	May 4	May 4	Apr. 25	. . .	May 7	Apr. 25	Apr. 28	Apr. 26
Maryland Yellowthroat	May 2	Apr. 24	Apr. 21	Apr. 26	Apr. 22	May 4	May 4	Apr. 25	May 4	Apr. 19	May 4	May 4	May 6	. . .	May 10	May 13	May 11	May 9
Chat . . . . .	. . .	May 9	. . .	May 10	May 1	May 8	. . .	May 9	. . .	May 8	. . .	May 8	May 16	May 10	May 10	May 15	. . .	May 11
Canada Warbler	May 7	. . .	May 11	. . .	May 12	. . .	May 12	May 8	May 12	May 7	. . .	May 8	. . .	May 12	. . .	May 15	. . .	May 11
Redstart	May 2	May 15	May 8	May 4	May 1	. . .	May 8	May 6	May 4	Apr. 19	May 4	. . .	May 2	May 1	. . .	May 6	. . .	May 4
Catbird	May 2	May 2	Apr. 24	Apr. 25	Apr. 24	May 2	May 1	May 1	Apr. 26	Apr. 26	Apr. 30	May 2	May 2	May 2	Apr. 30	Apr. 27	. . .	May 1
Brown Thrasher	Apr. 18	Apr. 24	Apr. 21	Apr. 18	Apr. 15	Apr. 9	Apr. 22	Apr. 17	Apr. 26	Apr. 18	Apr. 17	Apr. 26	Apr. 19	Apr. 22	May 4	Apr. 24	Apr. 18	Apr. 19
House Wren	Apr. 27	Apr. 24	Apr. 25	Apr. 23	Apr. 25	Apr. 28	Apr. 25	Apr. 23	May 4	Apr. 25	May 4	Apr. 26	May 7	Apr. 22	May 4	Apr. 28	. . .	Apr. 25
Long-bill'd Marsh Wren . . . . .	. . .	May 8	May 9	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	May 8	May 8	. . .	. . .
Ruby-crowned Kinglet	Apr. 29	Apr. 17	Apr. 21	Apr. 25	Apr. 12	Apr. 9	May 1	Apr. 9	Apr. 26	Apr. 16	Apr. 7	Apr. 12	Apr. 25	Apr. 15	. . .	Apr. 13	Apr. 20	Apr. 13
Wood Thrush	May 5	May 1	Apr. 28	May 1	Apr. 25	May 5	Apr. 30	May 2	May 1	May 4	May 4	May 4	May 6	May 1	May 3	Apr. 24	May 5	May 1
Wilson's Thrush	May 1	May 2	. . .	May 2	May 1	. . .	May 25	May 1	May 4	May 2	. . .	. . .	May 8	. . .	. . .	Apr. 24	. . .	May 1
Gray-checked Thrush . . . . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	May 17	. . .	. . .
Olive-backed Thrush	May 8	. . .	May 2	. . .	May 11	. . .	May 6	May 2	May 10	May 14	May 4	. . .	. . .	. . .	. . .	May 15	May 2	May 10
Hermit Thrush	May 2	Apr. 17	Apr. 13	Apr. 18	May 3	Apr. 9	Apr. 13	Mar. 7	Apr. 1	Mar. 31	Apr. 18	Apr. 2	Apr. 18	. . .	. . .	Apr. 5	Apr. 18	Apr. 7
Robin	Feb. 28	Feb. 16	Feb. 20	Mar. 6	Feb. 15	Feb. 16	Feb. 16	Mar. 7	Feb. 19	Mar. 1	Mar. 19	Feb. 6	Feb. 10	Mar. 11	Jan. 27	Feb. 19	Feb. 19	Feb. 20
Bluebird	Feb. 15	Feb. 20	Feb. 22	Feb. 14	Feb. 15	Feb. 18	Feb. 18	Feb. 6	Feb. 16	Feb. 7	Feb. 24	Feb. 21	Feb. 5	Mar. 11	Feb. 21	Feb. 16	Res.	Feb. 16

: Next April 17.

NAMES.	Cape May, N. J. E. 13; S. 72.	Vineland, N. J.
Flicker.....	Mar. 30	.....
Whip-poor-will.....	Apr. 23	Apr
Nighthawk.....	.....	.....
Chimney Swift.....	Apr. 29	May
Hummingbird.....	May 2	May
Kingbird.....	May 2	May
Great-crested Flycatcher.....	.....	May
Phoebe.....	.....	Mar
Bobolink.....	May 13	.....
Cowbird.....	Res.	.....
Red-winged Blackbird.....	Res.	Feb
Baltimore Oriole.....	May 2	.....
Purple Grackle.....	Feb. 13	Feb
Chipping Sparrow.....	Apr. 2	Mar
Chewink.....	Mar. 8	May
Indigobird.....	Apr. 29	May
Scarlet Tanager.....	May 13	May
Purple Martin.....	Apr. 11	May
Barn Swallow.....	Apr. 11	Apr
Red-eyed Vireo.....	.....	May
Black and White Warbler.....	.....	.....
Chestnut-sided Warbler.....	.....	.....
Ovenbird.....	.....	.....
Maryland Yellowthroat.....	Apr. 29	May
Chat.....	.....	May
Catbird.....	Apr. 6	Apr
Brown Thrasher.....	Apr. 23	May
House Wren.....	Apr. 23	May
Wood Thrush.....	Apr. 23	.....
Hermit Thrush.....	Apr. 8	Mar
Robin.....	Res.	Mar
Bluebird.....	Res.	Re



City Ornithology.

Mary S. Allen sends the following list of birds observed in the Friends' Western Burial Ground, Sixteenth and Race Streets, Philadelphia:

Song Sparrow, March 10 and 11, 1909.

Robin, March 25–October; probably nested.

Hermit Thrush, April 10.

Chipping Sparrow, April 10 and May 1.

Chewink, April 26.

White-throated Sparrow, April 30–May 1.

Ovenbird, May 15.

Abstract of the Proceedings of the Delaware Valley Ornithological Club, 1909.

January 7, 1909. Annual meeting. Thirty-eight members present. The following officers were elected for the ensuing year: PRESIDENT, William A. Shryock; VICE-PRESIDENT, Stewardson Brown; SECRETARY, Chreswell J. Hunt; TREASURER, Samuel Wright.

The meeting was called to order in the room of the Biological and Microscopical Section of the Academy and then adjourned to inspect the new Ornithological Rooms, where a special exhibition of skins had been arranged. The members then returned to a collation.

January 21, 1909. Seventeen members present. Mr. Hill described the bird life about Chautauqua Lake, N. Y., and mentioned the Parula Warbler and Redstart as having been found nesting.

Mr. Stone gave a summary of the spring migration of 1908. Mr. Morris described a visit to a Crow roost near New Brinton, Bucks Co., on January 16 in a driving snow-storm. He and Mr. Shryock stood within the woods and watched the Crows settle for the night. They first filled the trees on the edge of the wood facing the storm, and then those farther back making apparently no effort toward protection from the wind and snow.

Mr. Rehn reported a Little Auk (*Alle alle*) taken at Parkertown near West Creek, N. J., January 13, by Joshua Parker. Mr. Redfield reported a House Wren (*Troglodytes aedon*) seen on Rancocas Creek, December 5, 1908, and a Vesper Sparrow (*Poecetes gramineus*) taken at Wayne, December 21, 1908.

The president appointed the following committees : On Publication, Morris, Rehn, Wright, Hunt and Stone ; on Migration,

Redfield, Pearson, Baily, Street and Stone ; on Twentieth Annual Meeting, Stone, Morris, Wright, Pennock and Brown.

February 4, 1909. Twenty members present. This was the first meeting held in the new rooms on the fourth floor of the Museum.

Mr. R. T. Moore read a paper entitled "Three Finds in South Jersey," [see CASSINIA, 1908, pp. 29-40].

Mr. Stone presented some interesting data relative to the bird life of the New Jersey coast marshes fifty years ago. Pine Siskins (*Spinus pinus*) were reported as very plentiful this winter.

February 18, 1909. Twenty-three members present. Dr. Hughes described a trip through the Yellowstone and Southwestern Montana.

Mr. Stone described a second visit to the Crow roost previously reported by Mr. Morris. He considered it undoubtedly the Davis Grove roost listed by Mr. S. N. Rhoads twenty years ago, [see also CASSINIA, 1903].

Mr. Street reported a flock of about 200 Tree Swallows (*Iridoprocne bicolor*) at Cape May, N. J., February 14, 1909, and Mr. Stone on behalf of Mr. H. Walker Hand, exhibited a White-winged Crossbill (*Loxia leucoptera*) which had been captured by a cat at Cape May, February 5, making the first record of the species for Cape May County.

March 4, 1909. Thirteen members present. Dr. C. E. Ehinger, Dr. Francis H. Tomlin and Mr. Ernest Cortis, were elected associate members.

Dr. Spencer Trotter read the paper of the evening, "Relations of the Land Bird Fauna of Northeastern America," [see Auk, 1909, pp. 221-233].

Mr. S. N. Rhoads recorded a House Wren (*Troglodytes aedon*) at Haddonfield, N. J., February 28 and thought it quite likely that it had wintered there.

Mr. Moore exhibited an orange-crowned Warbler (*Vermivora celata*) taken at Haddonfield, N. J., February 25, 1909, and two Cape May Warblers (*Dendroica tigrina*) taken September 22 and October 6, 1907, at the same place, also a White-crowned Sparrow (*Zonotrichia leucophrys*) at Tuckahoe, N. J., May 11, 1907.

March 18, 1909. Sixteen members present. Mr. Stone spoke on "The Origin of the Genera of North American Birds."

Mr. Redfield reported Redpolls (*Acanthis linaria*) as abundant about Radnor Twp. for a week following March 5.

Mr. Rehn recorded the capture of a Rough-legged Hawk (*Archibuteo lagopus sanctijohannis*) at Stafford's Forge, near West Creek, N. J., March 6.

April 1, 1909. Twenty-two members present. Mr. Redfield read a paper on "The Winter Birds of Cape Cod," in which he described a ducking trip December 26-January 3 last. The Old Squaw (*Harelda hyemalis*) was the most abundant species. Next came the Goldeneye (*Clangula c. americana*) and Red-breasted Merganser (*Mergus serrator*). One Hooded Merganser (*Lophodytes cucullatus*) and a Scaup (*Marila marila*) were also taken. Horned Larks (*Otocoris alpestris*) and Myrtle Warblers (*Dendroica coronata*) were the most common land birds, while Snow Buntings (*Plectrophenax nivalis*), Meadow Larks (*Sturnella magna*), Robins (*Planesticus migratorius*), Bluebirds (*Sialia sialis*), and several Flickers (*Colaptes auratus luteus*) were seen.

A paper on the "Breeding of the Broad-winged Hawk in Chester Co., Pa.," by Mr. R. P. Sharples, was read. [See *antea*, p. 25].

Mr. Pennock reported the capture of a Northern Shrike (*Lanius borealis*) in Delaware on March 29, the first record for the state.

Mr. Stone placed on record the capture of a Baird's Sandpiper (*Pisobia bairdi*) by Mr. D. McCadden at Stone Harbor, N. J., September 5, 1898. The specimen had been misidentified and had lain undetected in the collection of Mr. Fowler, and later in that of the Academy, all these years. There is no previous record of the species from the state.

Mr. Hill reported 200 Fox Sparrows (*Passerella iliaca*) in Woodland Cemetery April 1.

April 15, 1909. Seventeen members present. A general discussion on the progress of the migration took place.

May 6, 1909. Fourteen members present. Mr. S. N. Rhoads addressed the Club on "Memories of a Departed Bird-Lover—William L. Collins." Other reminiscences were given by Mr. Morris and Dr. Trotter.

A paper on the nesting of the Goshawk at Warren, Pa., by R. B. Simpson was read. [See *antea*, p. 26].

Mr. Brown reported Starlings (*Sturnus vulgaris*) at Medford, N. J., May 2, and Mr. Morris described a Robin's nest built on the ground at Olney, Pa.

May 20, 1909. Twenty-five members present. Mr. Bailly exhibited a number of lantern slides illustrating the development of the Flicker and other subjects.

Mr. Morris described a canoe trip down the Blackwater River, Va., during April, 1909. [See *Recreation*, April, 1910.]

Mr. Rhoads reported a Cape May Warbler (*Dendroica tigrina*) at Haddonfield in full song.

Mr. Stone recorded the capture of a Brown Pelican (*Pelecanus occidentalis*) at Townsend's Inlet May 5th.

October 7, 1909. Eighteen members present. The resignation of Mr. Hunt from the office of Secretary and from active membership was read, Mr. Hunt having removed to Chicago. Mr. J. Fletcher Street was appointed Secretary *pro tem*.

Mr. S. N. Rhoads spoke on "Some Birds of the Upper Wallkill Valley, Sussex Co., N. J.," and exhibited a nest and set of eggs of the Short-billed Marsh Wren (*Cistothorus stellaris*) obtained there during the past summer. This species was a common summer resident.

Mr. Bailly reported a Cape May Warbler (*Dendroica tigrina*) taken at Haverford, Pa., Sept. 11, 1909.

October 21, 1909. Eleven members present. A paper written by Dr. Spencer Trotter entitled "Stray Notes of a Western Trip," was read which described a trip over the Canadian Pacific Railroad, made during the past summer.

Mr. Redfield reported on the work he had done during the early summer in tagging young birds in co-operation with the plans of Dr. Leon J. Cole.

Mr. Fowler reported a Black-bellied Plover (*Squatarola squatarola*) at Bristol, Pa., August 19, 1909.

November 4, 1909. Twenty-one members present. Messrs. Lewis S. Byrom and Samuel C. Palmer were elected associate members, Mr. Edw. J. F. Marx, a corresponding member and Mr. J. Fletcher Street an active member. Mr. Street was also elected Secretary to fill the vacancy caused by Mr. Hunt's resignation.

Messrs. Bailly and Rhoads and Dr. Hughes described a trip to Greenwood Lake, Sussex County, N. J., undertaken in June of the present year, [see *antea*, pp. 29-36].

November 18, 1909. Eighteen members present. The evening was devoted to the reading of Bird Biographies prepared for a prospective work on the birds of the Delaware Valley, the object being to get some idea of the best way of treating the subject before it was taken up at length. Mr. Street treated of the Phoebe, Mr. Rhoads the Robin, Mr. Stone the Chat, Mr. Weygandt the Wood Thrush, Mr. Carter the Cooper's Hawk, Mr. Morris the Redwinged Blackbird.

Mr. Morris reported a Northern Shrike (*Lanius borealis*) at Medford on November 5.

December 2, 1909. Twenty-three members present. This meeting was held in conjunction with the Ornithological Section of the Academy, in order that the members might hear the annual report of the Department of Birds.

Mr. Stone exhibited one of two Loons (*Gavia immer*) killed near Paoli, Pa., November 25.

Mr. T. H. Jackson had informed Mr. Stone of others killed the same day on the Brandywine Creek at Lenape, Pa.

December 16, 1909. Thirteen members present. Mr. Rehn addressed the club on "Impressions of Western Bird Life," commenting on birds seen on an entomological trip through the Northwestern States and down the Pacific coast.

Mr. Stone described the meeting of the American Ornithologists' Union in New York City.

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Bird Club Notes

THE Club is indebted to the American Entomological Society for the lithographs of Dr. Wilson used in the present issue. They were printed many years ago, presumably for the memoir by Prof. Jacob Ennis. For the halftone blocks of young hawks we are indebted to Mr. Robert P. Sharples.

* * *

The Club has held sixteen meetings during the year in which fifty members took part. The average attendance was nineteen.

* * *

Again the Club has suffered a severe blow in losing the services of its Secretary. Mr. C. J. Hunt has removed to Chicago, making the third secretary who has been drawn into a westward migration just as he had become essential to the welfare of the Club. By the theory of orientation we may expect some day to have them all back again.

* *

At the A. O. U. meeting in New York the Club was represented by Messrs. Rhoads, Baily, Morris, Pennock, Wright, Rehn and Stone, while Messrs. Miller, Todd, Hales, Rogers and Marx, of our Correspondents, were present.

* * *

Dr. Trotter has been in Europe since August and during the early summer visited the Canadian Rockies and the northwest coast. Brown was in Bermuda, Dr. Hughes in British Columbia and Redfield at Cape Cod, while Rehn was gathering grasshoppers in Idaho, Washington, Oregon and California.

OFFICERS AND MEMBERS

OF THE

Delaware Valley Ornithological Club.

1910.

SAMUEL N. RHOADS, *President*.
 STEWARDSON BROWN, *Vice-President*.
 J. FLETCHER STREET, *Secretary*, Beverly, N. J.
 SAMUEL WRIGHT, *Treasurer*, Conshohocken, Pa.

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SAMUEL WRIGHT, Conshohocken, Pa.	1892

* Date indicates year of election to Club.

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WILLIAM H. TROTTER, Chestnut Hill, Phila.	1899
HENRY TUCKER, M. D., 2000 Pine St., Phila.	1906
CHARLES A. VOELKER, Aldan, Delaware Co., Pa.	Founder.
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JAMES L. WHITAKER, Cedar Grove, Frankford, Phila.	1904
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H. A. SURFACE, Harrisburg, Pa.	1900
C. F. SYLVESTER, Princeton, N. J.	1901
W. E. CLYDE TODD, Carnegie Museum, Pittsburg, Pa.	1895
HENRY WARRINGTON, San Francisco, Cal.	1896
ASA P. WAY, Bridgeton, N. J.	1902
WILLIAM H. WERNER, Atlantic City, N. J.	1901
WILLIAM L. WHITAKER, Ada, Okla.	1893
J. JAY WISLER, Columbia, Pa.	1904
ROBERT T. YOUNG, State University, N. Dakota.	1892

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SAMUEL W. WOODHOUSE, M. D., Honorary member...	October 23, 1904

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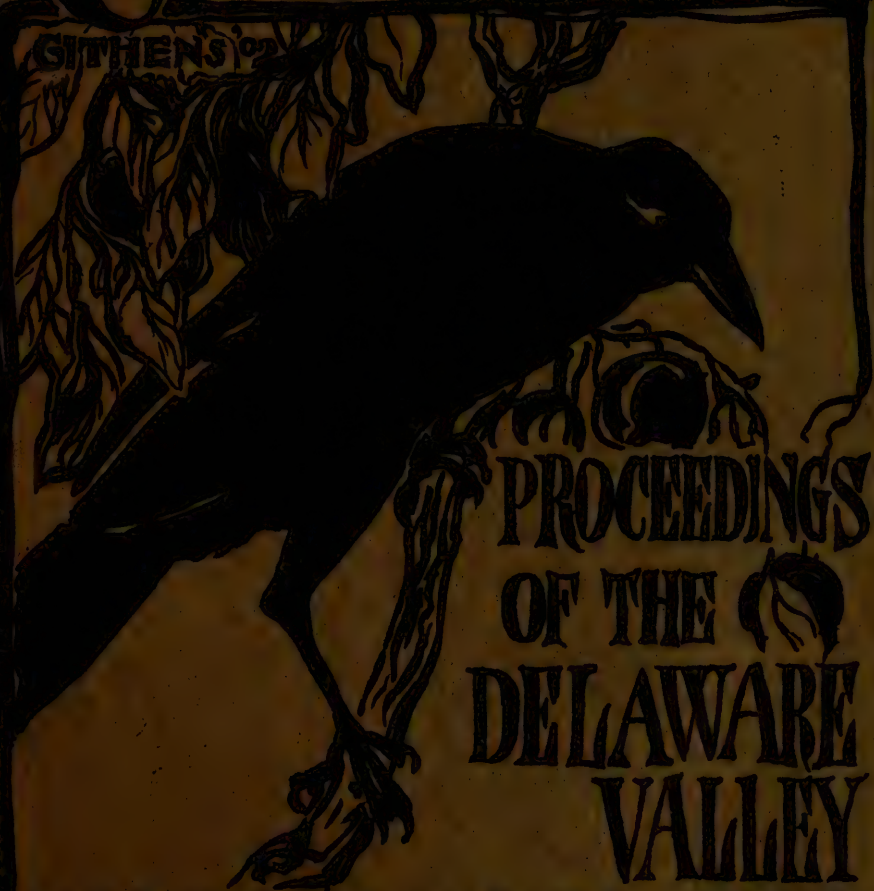
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CASSINIA

A BIRD ANNUAL

GITHENS'S



PROCEEDINGS
OF THE
DELAWARE
VALLEY

ORNITHOLOGICAL CLUB
OF PHILADELPHIA

1910

CASSINIA

An Annual Devoted to the Ornithology of
Pennsylvania, New Jersey, and Delaware.

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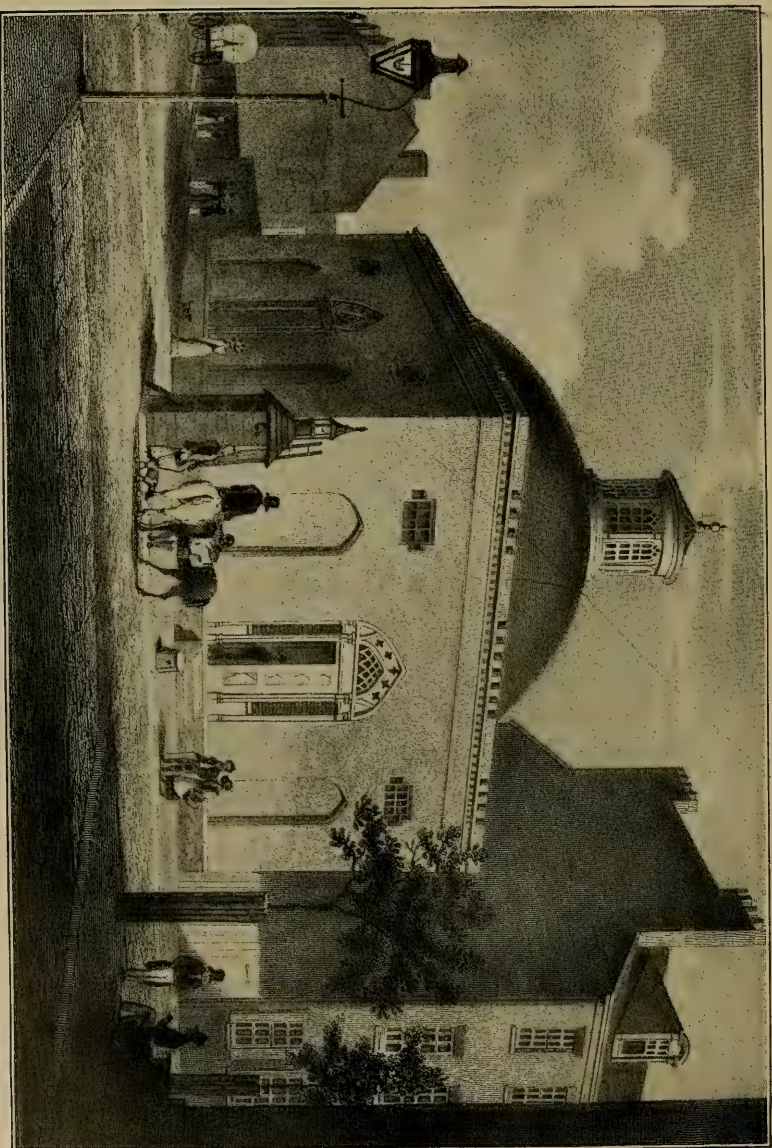
PUBLICATIONS OF THE D. V. O. C.

- The Birds of Eastern Pennsylvania and New Jersey**, by Witmer Stone, pp. 176 with two maps and portrait of Alex. Wilson. One Dollar and a-half. (Post paid \$1.62)
- Abstract of Proceedings**, Full Set Nos. I-IV. (1890-1900) pp. 98, Fifty cents
- Cassinia**, published annually beginning with 1901; comprising papers relating to the Ornithology of Pennsylvania, New Jersey and Delaware, and an abstract of the proceedings of the Club. Edited by Witmer Stone. Subscription price Fifty cents

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CORNER TWELFTH AND SANSON STREETS.

CASSINIA

PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB

No. XIV.

PHILADELPHIA, PA.

1910.

William Gambel, M. D.

BY WITMER STONE

The history of American ornithology or of the men to whom it owes its development is always fraught with interest to those of us who continue to cultivate the same study and to follow in the footsteps of predecessors whose minds ran in the same channels, whose thoughts are now our thoughts, and whose enthusiasm arouses our sympathy.

This is my excuse for presenting some rather disconnected fragments relative to the life of one of our early ornithologists whose name is familiar in the nomenclature of several of our western birds, such as Gambel's Sparrow, Gambel's Quail, etc. William Gambel was a leader among the bird-men of his time and a pioneer in exploration west of the Mississippi. But he has left us no record of his life and I have been unable to find any relatives who might supply it. Indeed, I have found but two men who knew him personally. Consequently of his birth and family I can say nothing. He seems, however, to have been born somewhere in eastern Pennsylvania or southern New Jersey and to have early attracted the attention of Thomas Nuttall, who no doubt encountered him on some of his excursions in search of plants and birds and who encouraged and

guided him in the pursuits in which both were interested. Young Gambel was brought to the Academy of Natural Sciences in Philadelphia, and was probably employed there for a short time. When little more than twenty-one years of age he undertook a trip across the continent at the instance of Nuttall some three or four years after Townsend's return. He took a much more southerly route, exploring the Raton Mountains of northern New Mexico and passing thence from Santa Fé to the Colorado River, then in the wilds of Old Mexico, and through southern California, returning round the Horn in 1845, stopping, as Townsend had done, at Valparaiso. From California he sent to Nuttall descriptions of some of his ornithological discoveries, comprising Nuttall's Woodpecker, Mountain Chickadee, etc.

About August 15, 1845, Gambel and his specimens arrived in Philadelphia. Cassin, writing to Baird on this date, says: "Eureka! Gambel is here with his California birds and others—not very many, but some of the most magnificent specimens I ever saw. He has four new species in addition to those already described: a queer little *Parus crested*, but totally distinct from *bicolor*; another which he calls *Parus* but is hardly of that genus—more like *Setophaga*; an extraordinarily large, long-billed bird which he calls *Promerops*; a new *Mergulus*, like *Alle*, but entirely distinct, with others that need examining. He has also most beautiful specimens of well-known birds, and others not so well known, as *Sitta pygmaea*, *Tyrannula saya*, *T. nigrescens*, *Sialia occidentalis*, etc. Decidedly the gem of his collection is a most superb specimen of *Leptostoma longicauda* Sw., a beautiful cuckoo-like bird which walks on the ground, but I have not time really to tell you about it. His *Lophortyx gambelii* Nutt. is splendid, and I can find no description of it in books to which I have access. His description of four new species will be made next Tuesday evening.

"Unfortunately he has made it an object merely to make one good series, which I shall try hard to get the Academy to buy. Of many birds he has but one specimen, though of several species he has duplicates—of *Sitta pygmaea* and *Parus minimus*—he and I have done little else for two afternoons and evenings

but examine these specimens—last evening till 12 o'clock—and I am now going to meet him again."

Later he writes:

"Gambel is exceedingly wild about describing, and it is already very difficult to get him to examine birds that he has concluded are new—concluded, I mean in the woods of California without books—with scarcely knowing the names of late ornithologists. The birds that he has described are not examined at all, and now the four of which he read descriptions last Tuesday evening I have not time to examine, as the paper is to be reported on next Tuesday. I apprehend there will be more work for you, and possibly some additional synonyms for your collection (Baird was making a list of synonyms), and the most doubtful bird, too, probably at least, he has called after me, *Mergulus cassini*."

In the winter of 1845-6 Gambel began to study medicine under Dr. S. G. Morton, while at the Academy he seems to have aroused the animosity of John Cassin, who was a good deal of a politician in the Society. Gambel was a candidate for Curator in the year 1847, but was defeated by the late Dr. Joseph Leidy, whose cause Cassin espoused.

In 1848 Gambel, who had received his medical degree, decided to make another trip to California, and Cassin's politic methods are amusingly shown in one of his letters to Baird. He says "I have taken much pains to cultivate Gambel lately merely because I knew he possessed a very unfavorable impression of me, and I wished to correct it." Evidently the possibility of more novelties from the far West which might not come under his care went a long way to heal a personal breach, of the merits of which we know but little. However, only misfortune came of Gambel's second trip, as he perished in the California mountains when only thirty years of age. During his short career Dr. Gambel served as Recording Secretary of the Academy, 1848-49, and on the Publication Committee, 1845-49. His accounts and descriptions of western birds, running through Vols. I-IV of the Academy's Proceedings, and some republications in the Journal, constitute his only contributions to science, but they stamp him as a naturalist of more than ordi-

nary ability, a fact which is confirmed and emphasized by those who knew him personally. Beside the record of his death, which appears in the Academy Proceedings, along with a faded clipping from a local paper giving the meagre details, we have likewise a letter from his young widow thanking the Academy for their resolutions upon his death, and a record showing that she loaned the Curators Dr. Gambel's journal of his last trip—a manuscript which I have failed to trace, but which if still extant must be fascinating reading.

In conclusion I am fortunate in being able to present an account prepared for me by the late Gen. Isaac J. Wistar, one of Dr. Gambel's companions on a portion of this famous expedition and recently president of this Academy, which gives a graphic idea of what he must have experienced.

“On April 5, 1849, when in appearance he was probably about thirty years of age, Gambel left Philadelphia in company with Isaac J. Wistar, to whom he was introduced on that day, and who was about to essay an overland journey to California. Wistar had just returned from Florida, where he had assisted in the organization of a company of thirteen young men called the Georgia and Florida Company. The party had arranged to rendezvous at Independence, Mo., then a celebrated starting point for fur traders and trappers, and also for the Santa Fé wagon trade, as soon as the grass should be sufficiently grown to maintain animals. It had also arranged through suitable detachments for the concentration at that point of the necessary wagons, mules, harness, provisions, ammunition, tools, etc., and it was also hoped that Gambel might be admitted to their number.

“The two men traveled by the Baltimore and Ohio Railroad to its then western terminus at Cumberland, Md., thence by the National Stage Road to Wheeling, and thence by various steamboats *via* Cincinnati, Cairo and St. Louis to Independence, situated four miles from the Missouri River landing of that name and twenty miles from the State boundary, then the United States frontier line against the Indians and the western limit of permitted settlements. It was then considered by the Company that all preparations having been confined to the sup-

posed wants of thirteen men for six months, no addition to their number could be made with safety, but a satisfactory place was found for Gambel in a Virginia Company of five men, one wagon and eight mules, which had been admitted for mutual protection to travel with the Company, and was glad to receive an additional recruit.

“After some necessary time in camp near Independence, occupied in completing preparations, breaking in teams, securing spare poles, axles and covers, etc., the two parties, of whom only Gambel exceeded the age of twenty-two years, made their departure on May 1st and crossed the frontier line on the 2d. The journey through the territory constituting the present States of Kansas and Nebraska, then an unbroken wilderness uninhabited except by Indians, was pursued with the usual incidents of Indian attacks (from Pawnees), stampedes, difficult streams and the other numerous obstacles of that early day, till June 2d, when at a point on the Platte River some hundred miles above Grand Island the party overtook a large ox-train of 70 or 80 men led by the well-known Captain Boone, of Kentucky. This train, like many others, had suffered severely and lost several men from cholera, which closely pursued the immigration across the plains, and did not cease its ravages till the highlands near the base of the Rocky Mountains were reached. They were anxious to secure the permanent company of a medical man, and proposed to associate Gambel with them, accepting his medical services as full equivalent for his proportion of guard mounting and the usual labor in camp and with the teams. The proposal was eagerly accepted by Gambel, who thus saw his way open, not only to a less arduous and laborious life, but for the better prosecution of his researches in natural history. The oxen traveled more deliberately, the men were generally older and less ardent, and he hoped for, and was promised, a considerable increase of his leisure time. The Virginians readily agreed to his wish, gave him his just proportion of the common outfit, and commended him warmly to his new friends, who seemed to be a substantial and agreeable lot of men.

“On June 3d, having the faster or more active teams, the Georgia and Florida Company, accompanied by the Virginians,

pulled out, passed and left the Kentuckians, and the two parties never met again. After numerous vicissitudes and the loss by various casualties of many men and animals, the former succeeded in passing the Sierra, and descended into California before the snow fell with but one surviving wagon, about half the original stock of mules and a serious and lamentable loss of men. Terrible suffering and loss of life ensued among the rear of that year's immigration, especially among those who reached the Sierra after the snows, and lost or were obliged to abandon their teams. Nothing was heard of Boone's train till the following spring, when the writer of these lines met two of them at Nye's ranch, now Marysville, who made the following statement, which, as far as known to this writer, was the last ever heard of Gambel.

"Boone's train, after losing many teams and wagons in the great graveyard of the Humboldt River desert, arrived late in the season at the Sierra and were overtaken in its mazes by the snow. Delaying for it to disappear, more snow fell, all pasturage disappeared, and after feeding their cattle for a few days on flour, all signs of the trail itself were buried and lost. They then, too late, abandoned their cattle and wagons, made snowshoes, and endeavored with the aid of friendly Indians to cross the mountains with such provisions as each man could carry. Most of them perished and were no more heard of, but Boone, Gambel and three or four others succeeded in making their way to Rose's Bar on Feather River, where Gambel almost immediately died of typhoid fever, resulting no doubt from hardship and privation.

"The present writer soon after entered the free service (*coureur des bois*) of the Hudson Bay Company, and was for some years absent in the mountains of the far Northwest, chiefly on waters of the Peace and Liard, and has never since met or heard from any of the other survivors of Boone's company, who at this late day, after the lapse of more than half a century, have all doubtless gone to join the majority on the other side of the river."

The only mention of Gambel's last expedition that I can find in Cassin's letters to Baird is under date of March 12, 1851, when he says: "Beesley, who accompanied poor Gambel, has

returned within a day or two; I have not seen him." This refers to the late Thomas Beesley of Beesleys Point, N. J., but none of his surviving relatives could tell me anything of Gambel, nor could the late Dr. S. W. Woodhouse, who knew him only from meeting him at the Academy, and never heard him mention his family or personal history.

Two brief sketches of Dr. Gambel that have only recently come to my attention give a little additional information about the ornithologist.

One of Dr. C. S. Sargent* is based mainly upon information received from General Wistar similar to that given above. Dr. Sargent states positively that Gambel was born in New Jersey but General Wistar was not certain about this when I talked with him. To the details of travel given me by General Wistar he adds the following in his letter to Dr. Sargent: "Gambel was a genial, kindly man and delightful companion but averse to the rough life, hard work and short commons then inseparable from such a journey. He was about twenty-eight at the time of his death, and had he lived to cultivate more congenial pursuits at home, would certainly have attained increased distinction as a naturalist. His taste for natural science was great, his attainments considerable, and his work even in youth valuable."

The other sketch is by Thomas Meehan,† who says: "He passed the early part of his life in Philadelphia, with his mother and sister, who were in humble circumstances. He pursued successfully a course of study in the medical department of the University of Pennsylvania, taking the degree of M. D. in March, 1848, adopting for his inaugural thesis "Organic Forms or Species." His death occurred on December 13, of the following year. His services to science commenced in 1842, when at the solicitation of Mr. Nuttall, whom some think was his uncle, he made an overland trip to California" with a party of trappers according to Sargent.

The newspaper clipping to the Philadelphia *North American*, above referred to contains the following :

*Silva of North America, Vol. VIII, p. 33.

† American Wild Flowers and Ferns, Series 2, Vol. II, p. 62.

“Dr. Gambel journeyed to the upper crossing of the Kansas with a small party of gentlemen from Georgia, Florida and Virginia, after which his company joined Indiana Company, No. 1, of which I had command, and continued with us until we reached Ft. Kearney, on the Great Platte. There he separated and joined a company commanded by Capt. Boone, of Kentucky, which followed the trail opened by Hudspeth’s Company, crossing the Sierra near the head of Sacramento Valley. * * * * * His loss is as sad as it is premature, and he sleeps at peace beneath the towering pines which cluster on a sunny hillside stretching up from the Rio del Plumas. He has departed early, but not unhonored. Philadelphia owes to his memory a lasting tribute of respect for his science, virtue, worth, talent and energy.

D. B. Woods.

As Mr. Meehan says : his lonely grave in what was then the great Pacific wilderness seems, sadly suggestive of the lines of Bryant.

“ Take the wings
Of the morning, traverse Barca’s desert sands
Or lose thyself in the continuous woods
Where rolls the Oregon, and hears no sound,
Save his own dashings—yet, the dead are there.”

An Unpublished Poem of Alexander Wilson

BY ROBERT P. SHARPLES

While nobody now lives to tell of a personal acquaintance with Alexander Wilson, the ornithologist, some of us can recall tales told in our youth by persons who did know him. And it is tradition in our family that good old Grandmother Jackson, as she was known in later days, was a pupil of Wilson while he taught school in the suburbs of Philadelphia in 1800. Wilson, as is well known, aspired to poetical fame; but while some of his work was meritorious, much of it was of very inferior quality.

One day he was going through a woods on the John Bartram farm when he caught a "Hen Hawk" alive. He took it home with him, but had no place to keep it. Shortly afterward the following rhyme was penned and sent with the hawk to his neighbor, Samuel Gibson, who was Grandmother Jackson's father. It has been treasured in the family ever since, though there is no record as to whether the appeal met with a favorable response. Mr. Witmer Stone informs me that he has in his possession another copy of the same poem taken from the original in the possession of Dr. Samuel Gibson Dixon, President of the Academy of Natural Sciences, and great-grandson of Samuel Gibson.

THE HEN HAWK'S PETITION

A Hawk, a noble Hawk, am I,
Who boldly sailed the lofty sky,
Until a Scotchman, like a Fox,
Surprised me on John Bartram's rocks.
He such an Indian war whoop sounded,
Like Pat of old he me confounded,
And home to Maximilian Leech's
Bore me, grappled in his Clutches.

Now in the chimney corner rammed
 Between two ugly baskets crammed,
 So dark I scarce can see to eat
 Or tell the colour of my feet;
 So narrow, too, whene'er I turn
 My tail and wings are sadly torn.
 Now as the Scotchman I suppose,
 (I wish my claws were in his nose),
 Intends in spite of law or reason
 To keep me close shut up in prison,
 I beg your honour would engage
 To fit me up a proper cage.
 You play the carpenter completely,
 Whate'er you do, you do it neatly.
 I know you are a man of merit
 Your fences, fields and barn declare it.
 Oft have I viewed your works with wonder
 As o'er your fields I sailed for plunder;
 Not on your fowls to make my dinner,
 No! birds and mice, upon my honour.
 So I beg you will pity my condition
 And grant this once my sad petition
 And I will promise and declare,
 If e'er again I wing the air,
 Your hens and turkeys, ducks and geese,
 For ever more shall dwell in peace.

A. Hen Hawk.

From Between the Baskets.

Breeding of the Raven in Pennsylvania

BY RICHARD C. HARLOW

One of the attractive features of field ornithology is its uncertainty. One never knows when some rarity may cross his path. Our list of spring transients may seem unusually complete until a passing glimpse of some long-sought rarity dims the luster of all our other observations and stamps this day as the red-letter day of the year.

So in all my field experiences in Pennsylvania and New Jersey the early springs of 1909 and 1910 stand out in bold relief—the seasons when I discovered the nest of the Northern Raven.

Before considering my experiences in detail it may be well to review the status of this bird in the State of Pennsylvania. The consensus of opinion seems to be that it is a rare breeder at the present time anywhere in the United States south of Maine, though it still nests regularly on the rocky islets off the coast of that State and thence northward to Labrador and Greenland and northwestward to Alaska. Mr. A. R. Dugmore in 1900 goes so far as to say that he has been unable to find an authentic record of its breeding within the United States, but several records for Maine were published in the *Auk* prior to that date, as well as one for the pine barrens of New Jersey. Since that date Mr. Herman Behr and Mr. Witmer Stone obtained a deserted nest from the top of a spruce tree in Garrett County, Maryland, just below the Pennsylvania line, which was presented to the Delaware Valley Club collection, and Mr. Behr's observations on its construction were published in *CASSINIA*. In the *Auk*, for July, 1905, Mr. C. W. G. Eifrig also describes a nest near Cumberland, Maryland.

The only nest actually found in Pennsylvania of which I can secure any definite evidence is one discovered a number of years

ago by Mr. Pierce, of Renovo, who still has the eggs in his collection. For this information I am indebted to Mr. W. E. Clyde Todd, of the Carnegie Museum, Pittsburg.

Aside from actual records of nesting, the Northern Raven seems to have been observed with more or less regularity, even during the twenty years of the Delaware Valley Ornithological Club's existence, and evidence of its probable breeding in Fulton County was obtained by several members. Dr. Warren's "Birds of Pennsylvania" includes records of its occurrence in a number of counties, and although he gave no definite nesting records, it seems safe to say that up to 1890 at least it bred locally through the wilder mountainous regions of the State.

Mr. R. B. Simpson, of Warren, Pa., writes me that the Raven was formerly of regular occurrence there, as well as in Forest County, but that it had disappeared some years back, and he had not observed it until last year, when several were seen about Renovo. This is an especially valuable bit of information, as Mr. Simpson is one of the most careful ornithologists in the State, and he could hardly have failed to observe Ravens had they been constantly resident in his locality. Besides the above notes I have recent records of the occurrence of Ravens in Somerset, McKean, Clearfield and Huntingdon counties. Farther to the east I have reports of their occurrence at rare intervals in Wayne and Pike counties, and casting out my previous record as doubtful (CASSINIA, 1905), I have a positive record of their occurrence in southwestern Pike county, as I observed two specimens there at close range on August 12, 1909. Mr. Stone also saw one in Sullivan county in the same month.

My experience of the last two years would tend to show that though rare and extremely local, yet the Raven is still a regular resident among the mountains of Center County. Moreover, it is extremely tenacious of its nesting place, as will be shown by the evidence of my notes. The fact of its rarity is manifest when I say that I had been at State College for over eight months before I saw my first Raven, and this despite the fact that I was in the field twice a week and kept a sharp lookout for them.

My first acquaintance with the Raven began on April 13, 1909. We were walking through the Nittany Valley about a mile southeast of State College when suddenly a hoarse, rolling "erruck" came to my ears. Even before I turned I realized that it was the bird I had been looking for, and I was not disappointed. About sixty yards off a Raven flew slowly by, frequently uttering its harsh note and closely pursued by an irate Crow. The difference in size between the birds was noticeable at once, the Raven being apparently twice as large as its tormentor. Again on the following day a bird was seen under nearly the same conditions, and each time it disappeared in the direction of the Nittany Mountains. The appearance of these birds interested me greatly, as I had heard previous reports of their occurrence back in the Tussey Mountain range. The result was that April 17, 1909, found me, in company with a friend, working my way along the ridge of the first range of mountains. The mountains at this point are some three or four miles distant from the town of State College, and are in the form of rather regular ridges, rising to a height of 1600 to 1900 feet above sea level. Several of the ridges have abrupt gaps, the sides of which are very rough, and in some places fairly large crags jut out from their sides. The country is for the most part denuded of timber, though the lower slopes and the gaps still support a few small stands of Pitch, White and Table Mountain Pines, while Hemlock, Black and Chestnut Oaks are rather common. We worked our way slowly along the crest of the ridge, and inspected several rocky shelves in vain. Finally we arrived at one of the gaps, and looking across to the opposite side I beheld a fairly large cliff ornamented with suspicious white splashes. Closer inspection showed a large nest in among the shelving rocks, and we hurriedly climbed across to the spot. At the point where the nest was placed, the crag was perhaps 35 feet in height, and the nest was built on a small projecting ledge completely sheltered from above. Though not inaccessible, it was up about 12 feet, and was extremely hard to reach. The nest was a large affair, fully a yard across on the outside, and was firmly built into the crevices of the rocks. Externally it was composed of dead sticks, some of them three-

quarters of an inch in diameter, and lined with thin strips of bark and a large amount of sheeps' wool. The sticks were freshly broken off, as was shown by their rough edges, while the nest was easily discernible from a considerable distance. The surrounding cliff was splattered with excrement, and a large number of insects were crawling about, attracted by the odor. A jagged pine stub in front of the cliff was evidently used as a perch by the birds, as the rocks beneath were a mass of chalky excrement. The nest held three young, nearly full fledged. On near approach they struck out with their beaks and uttered a harsh "cawr," more like a mixture of the notes of the Fish Crow and Common Crow than the croak of the adult Raven. During an hour's stay at the nest the old birds did not put in an appearance.

Having no knowledge of the nesting habits of the Raven we did not venture near the place again till May 1, as we were fearful lest the birds should desert the locality. As we approached the nest, one bird, presumably the female, flew continually about overhead, all the while croaking dismally. As we reached the cliff, much to our surprise, we saw that some one had destroyed the nest, which lay at the base of the cliff ruined. However, two of the young still crouched on the rock shelf which had held the nest. They seemed fully grown, though their feathers were still rather fuzzy. One of the young was secured, the solitary parent meanwhile flying in circles overhead and croaking frequently. Though we were in the neighborhood several times afterward, no trace of the birds was seen until May 30, when I observed one at a distance of a mile from the nest.

Summing up the evidence at hand, we came to the conclusion that the nesting season must be much earlier than we had supposed, for the eggs must have been deposited not later than March 10, when the surrounding mountains were still snow-clad. With this in view the locality was visited much earlier in 1910, and the results are appended below just as they were written in my note-book.

February 19, 1910. About twelve o'clock I set out for the gap to look for the Ravens. Several times small flocks of

Horned Larks (probably *Otocoris a. praticola*) were heard and seen, and along the base of the mountains Blue Jays and Juncos were quite common. Here I noticed a Raven chasing a Crow, and shortly afterward another one joined it and both soared about uttering their hoarse "crruck." They seemed far larger than the Crow, flew more easily and sailed much more frequently, while their wings and tail seemed much more conspicuous than those of the Crow. Owing to the deep snow it was very hard to get to the cliff, but on reaching it we saw a new nest in the most inaccessible portion of the rock. After some hard work the nest was reached, and I found it nearly completed, as the wool lining was just being inserted. The nest was on a ledge about 10 feet above the shelf which supported last year's nest. The sticks on the exterior were freshly broken, and a large number of sticks lay under the cliff, where they had fallen from the nest above. While we were at the nest the Ravens were flying about on the other side of the gap and constantly uttering their hoarse cries.

February 25, 1910. With Foster White I drove over in a sleigh to look at the Ravens' nest. As we neared the cliff I saw one of the birds perched on a dead stub near by, but soon perceiving us it took wing. Shortly afterward its mate flew directly from the nest and the two soared over us for a while, their cries varying from a hoarse "craw" to the usual "crruck." The birds soon soared over to the far side of the gap, where they perched close together on an old stub, and remained silently there during the half hour we remained at the nest, vainly trying to secure some photographs. As the birds soared over us I noticed that the feet are drawn up against the abdomen and not stretched out behind. On inspection the nest was found to contain two eggs.

February 26, 1910. When we reached the cliff no Ravens were to be seen. We examined the nest and found that another egg had been deposited. As we stood hidden near the nest we heard a coarse "craw" and the Ravens appeared, one flying low and the other high up, the upper one giving a beautiful exhibition of aerial gyrations. The lower bird, probably the female, soon went to the nest, but the other soared about for a

few minutes and then alighted on the dead stub near the cliff. We could hear them calling in almost caressing tones to each other, and their notes were almost soft, sounding something like a bell-like "coo-coo." Temperature 12°.

March 1, 1910. Foster White and I started out early this morning for the Ravens' nest. The day was springlike and the snow was melting. When we were about a hundred yards from the cliff the Raven darted off the nest and disappeared. The nest held a set of five eggs, which we collected and found to be perfectly fresh. Both Ravens soared over us high up in the air, calling several times, and then flew off and perched side by side on the dead stub on the far side of the gap.

March 12, 1910. Visited the cliff again. The birds were flying about the locality, but when I climbed to the nest I found it empty and the lining partly torn out. The birds seem very solicitous, however, and I almost believe they are building again in the vicinity.

March 13, 1910. This afternoon I started out for the gap to look for the second Ravens' nest, which was evidently somewhere among the rocks. When I came up the gap the male was perched on the stub just in front of the old nest, and soon seeing me he uttered a rolling "crrruck," evidently of warning, and flew off, followed by the female, which came from the vicinity of the former nest. On reaching the old nest I noticed that a new one had been built farther back on the same jutting rock. The nests were not more than two feet apart. The new one was built very firmly in among the shelving rocks, and was lined with sheeps' wool, which had evidently been torn from the former nest. It presented a striking appearance, as icicles had formed on the rocks, and some over a foot long hung down all about the nest. It contained two eggs.

March 14, 1910. At 10 a. m. the nest held three eggs, and the male was perched on his usual stub, while the female was on the nest. Both soared off to their usual perch on the dead stub across the gap.

March 16, 1910. In company with Foster White I set out for the Ravens' nest. As we neared the cliff we saw both birds circling about over the ridge on the opposite side of the gap.

On reaching the nest it was found to contain a set of five eggs, in every way counterparts of a typical set of Crows' eggs, though of course much larger. About an hour was spent in trying to secure some photographs, but the situation and the darkness of the day caused them to fail. Meanwhile the Ravens circled far overhead, constantly calling their discordant notes. The nest was fully three feet across, and inside the exterior of sticks was a warm lining of sheeps' wool, with some horsehair, a few small pieces of cow's hide and strips of thin bark. The cavity was deeply cupped, the eggs resting fully seven inches below the rim.

After securing two sets of eggs I naturally suspected that the birds would leave the locality; nevertheless they made a third attempt, and on April 10 David Harrower collected a set of four half-incubated eggs from the first nest. Since that date they have not been seen about the cliff, though on April 24 I saw and heard a solitary bird flying slowly up the Nittany Valley, about one mile from the nest. November 10, 1910, while out towards Scotia, in a section known as the barrens, I observed two Ravens flying over. This locality is ten miles distant from the nesting cliff, and there is no way of telling whether they were the same pair. While on a trip back in the mountains in Huntingdon County on May 7, 1910, another breeding record of the Raven was established, though the nest was not found. I saw at close range a pair of Ravens, and with them a single young bird, easily identified by his weak Crow-like "cawr," as compared with the hoarse "crrruck" which his parents uttered. Though I failed to find the nesting place, the locality is very wild, and there are several rocky crags as well as some tall, virgin conifers, affording good nesting places. Again on May 8 I saw this trio near the same spot.

From the data presented it will be seen that this pair of Ravens at least were very tenacious of their nesting place. Of course the evidence is far too meagre to draw general conclusions, yet the nesting season seems to be much earlier than generally supposed. The 1909 nest must have held eggs by March 10 at least, and the Huntingdon County pair could hardly have nested later than this date, while the 1910 pair had completed their set by March 1. The distance of the nest from

State College, and its general inaccessibility, made continued observation difficult, yet it would seem that one egg is deposited each day, and that the female remains on the nest during cold weather from the time the first egg is deposited. As is usually the case, the eggs seem to be deposited in the morning.

The Raven seems to disgorge indigestible food materials, much after the manner of our Raptores, as numbers of pellets lay under the nest. The pellets contained remains of crayfish, mice, several berries of Juniper, as well as the bones and hair of the Alleghany Wood Rat, of which there was a den in the cliff. About the nest at least the Raven is not as silent as the books would have him, for I have heard the male and female calling back and forth for fully half an hour at a time, and under such circumstances the notes were soft and actually pleasing. However, as soon as they discerned a person, the tones changed to the hoarse, rolling, guttural "erruck" which is so characteristic of the bird. They seem closely attached to each other during the nesting season, and exhibit much solicitude over the welfare of the nest and its contents. At such times the proverbial wariness was not much in evidence, as they frequently soared within thirty feet of our heads, calling violently. However, at other times they would stay high up in the air, and nearly always would soon fly off and perch side by side on a big dead stub where they had a clear view of the cliff. The flying powers of this bird are marvelous. Time and again I have seen the male circle high up, never moving a wing, and then come twisting and gyrating almost straight down until it seemed he must strike the earth, when he would suddenly veer up and sail off. At times their flight resembles that of a Crow, but when soaring they could not possibly be mistaken, and they almost resembled the Duck Hawk in their mad dashes when the nest was threatened. Taken all in all, the Raven possesses far more versatility than he is given credit for having, and my meagre acquaintance with him is treasured, not only for its ornithological value, but the pleasure of gaining an insight into the home life of one of our least understood birds.

A Prospectus

In 1894 the Delaware Valley Ornithological Club published an annotated list of the "Birds of Eastern Pennsylvania and New Jersey." Since the compilation of this list was begun the Club has spent nearly twenty years in further study of the bird life of this region and the possibility of publishing another and far more comprehensive work on the same subject has recently been broached at the meetings. The dominant thought in these suggestions has been that while the facts gleaned by the Club on distribution, abundance, migration, nidification etc., should be carefully compiled and welded into as complete an account as possible of the bird as we know it in the Delaware Valley, there should be something more—some sketch that will bring out the individuality of each bird and which will touch what Dr. Trotter has termed the "background of Ornithology," that illusive thing that is now the love of nature, now some familiar association, running through all our bird study and making of Ornithology something more than a mere branch of science.

The compilation of the body of the work being largely a matter of clerical routine has been left to the last, and attention has centered during the past year upon the preparation of these sketches or biographies of the more familiar birds. The ten men best able to do the work were invited to select ten or fifteen "favorite" species, for from choice, or circumstances, or both a man is always better acquainted with some species than others.

The results were interesting. The selections were made absolutely independently and so widely did preference vary that no less than sixty-seven species were selected and duplications were much fewer than had been anticipated. Only one bird was chosen by as many as five writers—the Cardinal. Seven species were chosen by four men—the Wood Thrush, Catbird, Chat, Field Sparrow, Vesper Sparrow, Purple Grackle, and

Turkey Vulture—and eight species by three. It was therefore easy to make an allotment of ten and five species respectively to the writers and yet give to each one species that he had, for the most part, himself selected. At several meetings the members have been entertained by the reading of certain of these sketches and the variety of treatment has been striking. On the following pages we present with Dr. Weygandt's permission his sketch of the Wood Thrush, as an illustration of the plan we have in view.—ED.

The Wood Thrush

BY CORNELIUS WEYGANDT

The Wood Thrush comes to us in the best days of the year, that week at April's end between cherry-blow and apple-blow. If the season is early you may hear him scolding in some wooded creek-bottom by April 26 ; if it is late it may be after May-day before you come upon him hopping, Robin-like but silent, along the wood-path you are following. In any year it is apt to be within a day or two of May before you hear him sing, and May itself before his chant attains its fullest power.

Long as I do for that song from the August day I last heard it to the April day when its imperfect venturing brings me again what is one of the great recurring happinesses of my life, it falls on my ears when at last I do hear it with no surprise. Familiar as is the Robin's after-sunset call, it is always startling to me when I first hear it, as most years I do, from the great oaks outside my window, at early candle-light some evening of late February ; and always startling, too, is the long and intricate warbling of the Ruby Crown that six weeks later hurries me out early in the morning to make sure it is the Kinglet himself that is again in the pear-tree made memorable by his wonder-waking song. Perhaps it is because I have heard his song in dreams that there is no surprise when life is again re-freshened for me by the leisured raptures of the Wood Thrush ; for though I dream almost not at all there is never a winter passes but that some night, perhaps of gritty snow that is driven against the windows like blown sand, perhaps of thaw with wood's breath on the wind, I hear that song. Perhaps it is because after all, it is a song of few notes, and at once thrilling and reconciling, that it will not out of memory.

To some the Wood Thrush and his song are symbolical of deep woods, of places remote from cleared lands and home-

steads. It is not so with me; that is my association with his cousin, the Hermit Thrush. My home has always been where suburbs and country meet, where wood-lots and lawns, orchards and gardens are intermingled, and always the Wood Thrush has been one of the birds about the place. Not only have lawn and thickets of shrubbery been his hunting ground, but he has built his nest there as well. In four places where I have lived he has nested within a stone's throw of the porch, twice very close to it. Once it was in a white lilac in the door-yard, and the other time in a wild cherry tree that almost overhung the house. I have happened on his nest, of course, deep in the woods, along an old trail in the Poconos for instance, and I have heard him answering a score of his fellows through the afterglow along the gorges of the Tuscaroras, finding him in both localities outnumbering the Veery and the Hermit Thrush; but to me he is a bird no more distinctive of these mountains than of our valley of the Wissahickon. Nor is he much more distinctive of such lowland along the creeks than of the higher land about them. I live on a plateau almost a hundred feet above the Wissahickon and a half-mile back from it, but even in that location there are two Wood Thrushes, beside the Wood Thrush of our lawn, that "at the right time of the year" sing every evening within our hearing. In the shallow wooded valley between my home and the station through which I pass daily to and from town I used to hear, before the builders invaded it, as many as seven Wood Thrushes singing at once of a June evening. There may have been one or two more, but seven songs were as many as I could distinguish by moving now here and now there so as to be sure I was not misled as to the number by the birds changing their singing stations. All of these seven, of course, may not have made this their home, some coming down perhaps from the higher land about, to join in the evening chorus, that chorus whose dominant phrase is the *airoee* Nuttall has so wonderfully caught.

From late April until early August the Wood Thrushes sing throughout our rolling lowlands about Philadelphia, from a day or two after their arrival from the countries about the Carribean, until the approach of the moulting season. A pair whose

earlier nesting ventures have ended in disaster will sometimes try and try again even into late July. One year (1907) I heard a wandering Wood Thrush, evidently in quest of a mate, sing on August 13, and as beautifully, with phrases full and undeteriorate, as though it were mid-May. This bird I heard sing in the morning near my home and later in the day I heard him sing again and as fully nearly a mile away. I am pretty sure that it was the same bird for not only were most of his fellows silent, but his song was individualized and easily recognizable.

Nesting begins about two weeks after the arrival of the Wood Thrushes, and the young begin to appear on the lawn about the end of the first week in June. In my experience, if the early brood is successfully reared a second brood is not attempted. The Wood Thrush, like all his kind with which I am familiar, like Bluebird and Robin, and Hermit Thrush and Veery, is a good husband and father. He takes his place on the eggs to relieve his mate and he helps in the feeding of the young. He is valiant in resisting attacks on his brood and capable of creating as great a hubbub over the presence of marauders as Redbreast himself. Head feathers raised into almost a crest, wings beating and drooped, and tail uptilting, all of him aquiver and jerked about by his excitement, he will scold from some low limb at skulking cat or persistently threatening squirrel until he has driven off the enemy or the nest is rifled. Before the latter happens, however, the thief must run a gauntlet of dauntless swoops and dashes from both male and female bird. These sometimes carry the excited bird so close that its beating wings may force the thief to jump from the limb he is following toward the nest. I am afraid that Chickaree when once he has found a nest will watch his chance and return when it is unguarded, but a cat so discomfited will often not return.

Not less alarmed is the Wood Thrush when you climb up to his nest for the joy of looking at those eggs of darker than Robin's-egg blue. Near to the house as he will build, and close to you as he will come to pick beetles from the grass or moth millers from the shrubs he never adjusts himself to familiarities as does Robin. I may look out of the little third-story window

of my house onto the Robin's nest but three feet below in the trumpet vines and the bird will only flutter off, with a half protest, and alight on the pear-tree ten feet away, scolding from time to time until I withdraw. The Wood Thrush is alarmed to the point of terror if I but once visit his nest in the nearby wild-cherry, and sometimes if you, more than once, no matter how, visit a nest conspicuously situated he will desert it. It is an easily found nest often within reach of the passerby and seldom higher than twenty feet from the ground. A crotch of a spice-wood bush is a favorite situation, or some twiggy place toward the extremity of a long, horizontal limb of a red maple. Almost always if in the woods itself it is near some clearing or along some path or waterway. Very often, like the Catbird, the Wood Thrush will put a white rag or piece of paper among the leaves that make the nest's foundation. Upon these he rounds the walls of mud, which he lines with black rootlets that well offset his deep-blue eggs. Four eggs is the usual number, but often there are only three. Five I never found but once, and then the fifth was a Cowbird's, the only time I ever found that egg in the nest of a Wood Thrush. Nor have I ever come upon a Wood Thrush feeding one of those gray youngsters, fat and complaining, as I have so often upon Redeye and Song Sparrow and Black-and-White Creeper. It is not, of course, that the Wood Thrush is more intelligent than these birds in disposing of the intruder's egg, but that it is seldom deposited there, and that when it is the nest is apt to be abandoned because of the sensitiveness of the Wood Thrush to any disturbance of his home.

June is the month, I think, during which the Wood Thrushes are most constantly in evidence on lawn and wood-floor. Certain it is that I see more, both young and old, about our place then than at any other time. In my walks in the Wissahickon woods, too, I meet the Wood Thrushes most frequently in this month, though there are many, especially fledglings, about in early July as well. Wood Thrush song lessens considerably in late July, but in woods and on shaded lawns the birds are still often to be come upon until mid-August. From this time on I hear them scolding much more frequently than I see them.

My neighborhood's Thrushes now spend much of their time in a nearby woods, in which the trees are far enough apart for the ground to be densely thicketed. They visit the lawn rather seldom now, until the wild cherries ripen. Then the Wood Thrushes come often, clinging to the fruited sprays and feeding there like the Redbreasts, and at times even fluttering before the little bunches like Hummingbird before trumpet flower and gathering the fruit on the wing. They will descend, too, to the ground to pick up the cherries that are scattered there.

The Wood Thrushes are generally in all but full plumage again by the end of September, and not long afterwards they steal away quietly, without flocking, to the South. In 1909, however, at least one Wood Thrush of our lawn lingered on in the neighboring wood's-edge until almost the middle of October, and was very noisy in the last days of his stay, scolding loudly early in the mornings at I know not what.

To me the Wood Thrush is the bird of birds. I am no fonder of him than of Robin or Wren, of Barn Swallow or Wood Pewee, of Song Sparrow or Whitethroat, the other birds that I have at once known best and cared for most through long years. But very fond of him I am. His quiet ways that reveal something that in men we call breeding is perhaps as large a cause of my fondness as the associations that sight and sound and thought of him bring up, and as his beauty of plumage and of voice. This fondness for him is, I think, general. Not only have we the testimony of many lovers of birds from the time of Thomas Jefferson and Alexander Wilson that they hold his song first among the songs of our country's birds, but the stronger testimony there is in the popular name for him in the general neighborhood of Philadelphia—Wood Robin. He is to villager and countrymen, and to the children who fill the towns, the Robin of the woods, the wood bird that is loved as is loved the Redbreast of the home-yard. Not that the Wood Thrush is distinctively a wood bird, for as my evidence has it he is not, but that of birds that visit the environs of suburban and country homes he is most often recognized by appearance and by song when met in the woods he also frequents.

The Wood Thrush is a handsome bird in his wood-brown and

soft white dusked with gray-black, and the dignity of his ways when danger does not threaten him or his adds to his beauty of hue and carriage. There are, however, many birds as handsome. It is his song that, added to his other characteristics, makes him to me the bird of birds. There are those that think more beautiful the song of Veery or Hermit Thrush, but, associations apart, and judging only on quality and relation of notes, I must write down his song as the most beautiful bird-song I know. I have many times listened to these three thrushes singing side by side, in the Berkshire Hills and in our own Poconos, and I have never had the least doubt as to which song had in it most of beauty. Lovely as is the Veery's song in itself, it takes the accompaniment of moonlight and absolute stillness and far-off places to raise it to the plane of the major songs of Hermit Thrush and Wood Thrush.

And of these two major songs I have never heard so silver-voiced a Hermit Thrush as one of three I several times listened to in the summer of 1909 in the Poconos. Where he sang, there sang, too, on more than one evening, a Wood Thrush. Now I was intent on the one song, now on the other. Every time I heeded the Hermit Thrush I wondered at his music, but the liquid woodwind notes of the Wood Thrush reached that within me that was far more intimate than wonder. The Hermit Thrush, if you like, catches an echo in his song from harps struck in some land that is happier than any man knows, and perhaps there is finer phrasing and a more aerial music in his song than in that of the Wood Thrush, but it has not the incomparable quality of Wood Thrush song, the mellow roundness of note, the nobility of accent, the heart-easing and uplifting fall, the lyric cry so human, yet so strangely free of the restlessness and sorrow of all things human. That chant is uplifted in my memory whenever I think long of it, be it some still gray dawn of November or blowing sunny morn of March, and when I so hear it, it brings back with the hearing all the cool freshness of late April eves, the scent of wood flowers and just unprisoned buds of shrubs, wood-edges where the cones of blossoming mazzards rise against the green mist of unfolding leaves of tulip-trees and oaks, low white clouds that presage

rain, and wind out of the sunset and broken light. I can almost see the brown bird there in the half light on a low limb close to the trunk of a still leafless chestnut, his throat swelling with that hallowed and hallowing hymn. Pure and cool, calm and reconciling, it flows through my memory, sweet of all the quiet joys of living.

Nesting of the Blackburnian Warbler (*Dendroica fusca*) in the Poconos

BY DAVID E. HARROWER.

In the Pocono Mountains of Pennsylvania is a paradise for the bird lover, and of all the birds found there no family is so well represented as the Warblers. About La Anna, in western Pike County, where these observations were made, sixteen species were found as summer residents. Along the roads could be seen Yellow-throats, Redstarts, Yellow Warblers, Ovenbirds and Black and White Warblers. Back in the woods were Magnolias, Blackburnians, Northern Parulas, a few Pines, Black-throated Greens, Canadians, Black-throated Blues and both species of Water Thrushes. In the clearings Chestnut-sideds were abundant, and very rarely a Mourning Warbler was observed.

Seven o'clock on the morning of June 17th, 1908, found me at the edge of what is locally known as the Primæval Forest. Behind me was the woods, undisturbed through centuries. Here great hemlocks predominated, but everywhere were maples and grand old birches. The undergrowth was very dense; to my right, down near the stream, it consisted of an almost impenetrable growth of rhododendron, while farther up the slope to my left it was not so thick, and here occurred several deciduous shrubs, with moosewood, bass wood and a few small hemlocks. Few flowers grew beneath this perpetual shade, and the atmosphere was of moisture, coolness, and serene peace. To my right, at the foot of the slope, the Wallenpaupack swirled and roared and foamed over its rocky bed between banks fringed with rhododendron. Before me was spread out a panorama of deforested hills covered by a dense second-growth, while here and there stood a lonely tree, spared for some reason by the lumberman's axe. Along the border of the forest were

a number of isolated hemlocks daring to venture forth into the open from the protection of their neighbors of the woods.

Birds were here in abundance. A Winter Wren was busily engaged in feeding a hungry brood. From down near the creek came the lazy notes of Black-throated Blue Warblers, and occasionally the spirited song of a Canadian. Singing overhead in the hemlocks were Magnolia and Black-throated Green Warblers. The clear notes of a Rose-breasted Grosbeak came floating across the second growth, mingling with the songs of Chestnut-sided Warblers and with that of a Tanager. From deep in the forest came the sweet warble of a Solitary Vireo and the droning song of a Chickadee. A Hummingbird buzzed inquisitively about my head for an instant and then was gone. An Olive-sided Flycatcher swooped from his perch on a dead stub and returned with an insect in his bill. From every side came bird notes and songs, a soft, sweet harmony of sound.

It was not long before I saw a female Scarlet Tanager fly to a horizontal branch of a hemlock, about forty feet from the ground, and disappear. Ascending the tree, I found a handsome nest which contained four well fledged young. I sat dangling my feet into space, watching the animated life below and beside me. On every side where warblers, some singing, some busily engaged in hunting insects, and it was from this excellent post of observation that I caught sight of one or two beautiful male Blackburnians, the first I had seen that day. My attention was attracted by the excited actions of one of them and he was soon joined by his more quietly garbed mate in a demonstration against me. After watching the female for several minutes I saw her fly to a branch of a hemlock about sixty feet away. She left it at once, but quickly returned and this time did not reappear. I descended and approached the isolated hemlock among the lower branches of which she had vanished. A vigorous rap on the trunk sent her from the dense mass of foliage overhead. She flew to a neighboring tree and began at once to scold at me. Nervously flitting from twig to twig, occasionally snatching an insect in passing, she watched me intently, chipping all the while. I climbed the tree and found a nest containing four young birds. The parents were

very solicitous, often flying within reach of my hand and sometimes alighting and lying for a moment upon the dense, green hemlock needles, with quivering outspread wings and tail.

The nest was situated about thirty feet from the ground, in a thick mass of foliage formed by the first branch of the hemlock. There were only a few stubs between this branch and the earth. The nest, surrounded on all sides by foliage so dense as to effectually conceal it from below, was placed about two feet from the trunk at the fork of a small branch. It was fairly well constructed, and was composed of hemlock twigs, dry grass, a few strips of weed fiber, and lined with finer materials. The young, which were apparently about two days' old, were very weak, and lay motionless while I was at the nest.

The next year, 1909, I left for the Poconos, on June 15th, and the next morning was again at the edge of the Primæval Forest, at exactly the place spoken of previously, with the the woods cool and still, the Wallenpaupack foaming over the rocks down below me, and the birds singing everywhere, — as though a day, and not a year, had elapsed since I had been there.

My attention was immediately drawn to a rich, ringing song from the second-growth, but it was sometime before I located the singer, flitting from bush to bush, and identified him as a male Mourning Warbler, my first record for the Poconos. That second-growth offered a very dense tangle in which to look for a nest, but I set to work. Two nests of the Chestnut-sided Warbler rewarded my efforts, but no success attended my endeavor to locate the nest of the bird whose song rang in my ears decisively.

Throughout my search for the nest of the Mourning Warbler I had been half-conscious of a persistent, faint, sharp chipping, which came from overhead. At last I saw the bird flitting about in the shadows above me, and it proved to be, as I had thought, a female Blackburnian Warbler. In a few moments she flew to the lowest branch of a large hemlock standing out in the second-growth and there disappeared. I approached; and this time, before ascending the tree, I saw the nest. It was placed upon the first branch, twenty-eight feet from the ground, located at a

fork three feet from the trunk, and it held four young about three days' old. These young birds I removed, and substituted for this nest an old nest of a Towhee which I had found just before ascending.

This Blackburnian Warbler's nest is before me now. It is composed principally of hemlock twigs interwoven with dry grass, plant fiber, rootlets, one or two leaf stalks and a tiny dry leaf. On the exterior are several pieces of plant down, spider web and fur. The lining is of fine grasses, slender strips of plant fiber, several stiff white hairs and a few very slender, black fern stalks. The outside diameter of the nest is four inches; the inside diameter is two inches. The nest is well cupped; the inside depth is about an inch and a quarter. The general appearance is like that of a Magnolia Warbler's nest, but it is much more substantially built.

The tree in which this nest was built was not more than fifty feet from the tree in which I had found the Blackburnian's nest containing young during the previous June. Another point of similarity is the fact that the first nest was only two feet farther from the ground than the second. It seems very probable that these two nests were built by the same pair of birds, and although for two years I had found the nest of these Warblers I was unable to secure a set of eggs.

In June, 1910, I again made Pike County my objective point, and on the 13th I was once more at the spot where for two seasons I had found the Blackburnian's nest. At first not a bird of this species was to be found; even the Mourning Warbler was not in sight, and I missed his spirited song. Suddenly I became aware of the faint, persistent chirping of some bird in the foliage overhead, and I realized at once that the note was that of a Blackburnian Warbler.

In order to confirm my judgment I began at once to look for the bird, but it remained hidden in the upper part of the forest canopy. Not a glimpse of it could I catch, and I was almost ready to sit down at the foot of a tree and watch for the bird when my upward gaze was arrested by something in the foliage directly overhead, which upon more careful scrutiny proved to be a nest. It was small and near the trunk, and for some rea-

son I felt that my quest was over and that I had found the nest before seeing the bird. It took but a minute for me to "shinny" up the slender trunk of the hemlock in order to reach the nest. A moment of hesitation and expectancy and then I leaned over and looked down through the delicate fronds of hemlock into a nest containing four beautiful eggs.

Like the other two, this nest was placed in a hemlock, upon the lowest branch and within four feet of the trunk. Unlike the nests found in previous years, it was placed in a hemlock well within the margin of the forest instead of in an isolated tree. This nest was about fourteen feet from the ground, only half as high as the lowest of the other two. The birds did not show much concern over my intrusion and neither came within twenty feet of me. The female was more demonstrative than her brilliant mate, and kept up a continual chipping as she flitted about in the neighboring trees.

This nest is a handsome structure; it is deeply cupped, its inside diameter being scarcely two inches. Its composition is similar to that of the other two nests. Hemlock twigs form the basis for the whole structure, and they are firmly interwoven with weed stalks, strips of plant fiber, dry grass, a few rootlets, etc. The exterior is decorated with catkins, plant down and spider webs. The lining is very heavy and is made up of fine grasses and a large number of fine black fern stalks. The eggs are four in number and are very beautiful. They have a ground color of white tinged faintly with green, and are heavily wreathed about their larger ends with spots and blotches of rich brown, sienna, and lilac. The shells are without gloss and very delicate in texture.

Recollection of Wild Pigeons in Southeastern Pennsylvania, 1864-1881

BY JOHN G. DILLIN

My earliest recollection of the Wild Pigeon dates back to an evening when I could not have been more than four or five years of age. A neighbor stopped with the news that Pigeons were roosting in Gibson's Pines about half a mile from our home. I well remember how my father led me by one hand through the dusk, while with the other he grasped the old family shot gun. I recall how cautiously we entered the woods and the great whirl of wings that followed. There was a flash of fire and it was all over: a splendid opportunity for a pot-pie had been lost, and, all because a very small boy had blundered into a pile of dry brush, the snap shot at the disappearing flock had naturally been a failure as proven by a careful search the following morning. This incident occurred about the year 1864, in Tredyffrin township, Chester Co., Pennsylvania upon the very spot where now stands the village of Weadlytown. The surrounding country at that time was a series of chestnut ridges with an occasional bunch of oaks and the pines already alluded to—about four acres in extent and of the 'Jack' variety (*Pinus rigida*). There were three or four other small tracts of these pines in the same neighborhood and in each of these Pigeons would occasionally stop to roost. They seemed to have a preference for pines and in hunting Pigeons I recollect we always searched the pine woods carefully. In fact the last Pigeon I ever shot was perched upon a dead pine limb—this was in October about the year 1881.

In southeastern Pennsylvania the pigeons seldom made their appearance until September, but on two occasions I remember seeing them in August. Once a small flock late in the month from which my brother shot a fine female and another occasion

in 1878 when I shot a young bird with pin feathers—I think not later than the fifteenth, for I well recall my surprise at getting a Pigeon so early, and I still think that it must have been bred in one of our eastern counties.

The proper time to expect Pigeons in our locality was the first cool spell of weather in September, especially after a heavy storm if none had been seen before. The first clear cool morning after the fall equinox we could expect them with absolute certainty. I well recall our preparations on a clearing night. How carefully we loaded the old muzzle-loader with number six shot and planned for the coming morning; how eagerly we awaited the sunrise from a neighboring hill top, carefully scanning the horizon for a glimpse of the splendid birds! And when they appeared how all eyes would follow them with a view to locating their stopping place, for unless the feeding ground was located, the chance for a pot-pie was remote indeed.

The Pigeons' stay in these parts was a comparatively short one, and I might say that from September 10 to October 10 they could be looked for at any moment, while from the latter date up to and including the first week of November they were occasionally seen, but with rare exceptions only single birds. I recall three occasions when I shot single birds in November, and in each case they were feeding on the ground under oak and dogwood trees. I know of others shooting single birds under similar conditions, one in 1883 and another as late as 1886, and this I feel pretty certain was the last Pigeon ever taken in these parts. It was shot by John S. Murray with a twenty-two calibre rifle one mile north of Radnor Station on the Pennsylvania Railroad.

While as I have said it was the exception to see Pigeons as late as November, nevertheless the largest flock I ever saw was in early November 1877 or 1878, following a heavy rainstorm. The birds were flying along in a northerly direction, high in the air in extended order and probably numbered three hundred individuals. Occasionally in March we saw Pigeons also. In March 1867, when the ground was still white with snow and a heavy sleet covered the trees, a fine bunch of Pigeons settled upon a tall Buttonwood that stood close to our door. As a

matter of course they were promptly greeted with a charge of no. 6, from the old single-barrel and one bird was secured. This flock contained about fifty birds. Again in March 1872 or 1873 during a stormy period my brother rushed into the house with the ever-welcome information that a large flock of Pigeons had just passed down the ridge in the direction of the Letchworth Pines. Immediately two boys armed with shot guns were moving rapidly in that direction. It was a gloomy day and night was near at hand when we reached the spot. I think I shall never forget the sight that greeted our eyes. A giant Black Oak stood in the midst of a thicket of small pines and chestnuts, its huge form towering above the smaller trees, and its naked branches literally covered with Pigeons. A few hasty whispers and we moved cautiously through the pines until within thirty yards of the tree, but before our guns could be properly aimed there was a tremendous uproar, and they were off. Four shots followed them and three birds fell to the earth. This flock contained probably two hundred birds, and could our fire have been properly directed great slaughter would no doubt have followed. We had no flights of Pigeons within my recollection at all comparable to those credited to the upper part of the state, our flocks seldom exceeding fifteen birds. In the fifties, however, as I am informed by Messrs. John S. Murray and Wm. W. Morris, much larger flights occurred, and the wheat fields were regularly visited by the birds. Mr. Murray tells me also that when a boy attending the old Carr school a mile and a quarter north of the present town of Wayne, he remembers old Ben Wharton, continually shooting Pigeons from a great dead oak tree that stood in the eastern end of the playground. At every discharge, the scholars would persist in peeping out of windows to the great annoyance of the teacher. Wharton was quite a noted hunter, as was also Eli Roberts, a veteran of the war of 1812, whom I well remember, wearing a tall hat and doing his shooting with a flint-lock gun. He died about 1870. Wild Pigeons always impressed me as having two principal characteristics, timidity and stupidity. Usually they were very timid and the snapping of a twig or the mere glimpse of a person approaching, would start them in flight, and once when

I had a clear shot at a bunch of seven, the gun missed fire and at the snap of the cap they disappeared like a flash. Again I recall a flock of about twenty birds that my brother and I saw enter a piece of woodland about noon, on a hot September day, which was an unusual time, evidently in search of water from a stream; and we shot three birds in succession before the rest flew away. On another occasion, in the same woods I discovered a bunch of Pigeons sitting in the oaks. Being unarmed, I walked leisurely under the tree and counted the birds and watched them for about half an hour, during which time they exhibited not the slightest fear.

A dead tree-top or dead limb was always an attractive roosting spot, and I have known birds to sit on the same perch for hours at a time. On one occasion my father found three Pigeons sitting on a dead limb, and finding no ammunition in the house, saddled a horse, rode two miles and a half to the store and back, loaded the gun and shot them from the same limb on which he first saw them. Apparently they had not moved an inch. When a Pigeon was resting he invariably sat flat on the limb, his head drawn close to his body. On the approach of danger he generally stood up and stretched out his neck; if his head moved slowly about, you were safe in the belief that he was not alarmed; but if on the contrary a rapid motion of the head was observed, it was a case of shoot quickly, for he had decided to fly, and when he did fly he was off like a whirlwind.

When traveling leisurely over the country Pigeons flew in open order, but when frightened and going at full speed they flew in close rank. Their long tail and pointed wings were quite conspicuous, and there was some resemblance in wing action to a huge Chimney Swift flying dead away. A flock of Kildeers passing a quarter of a mile away at about one hundred and fifty feet elevation gives a good idea of the appearance of a flock of Pigeons.

In flight the female appeared most conspicuous with her whitish breast; the light pinkish breast of the male, however, showed to best advantage when roosting, especially when the light shone full upon it.

Report of the Spring Migration of 1910

COMPILED BY WITMER STONE

Our corps of observers this year numbered thirty-nine. We earnestly appeal to all of them to continue the work next year and to encourage others to send in their observations. Schedules will be mailed upon application to the Delaware Valley Ornithological Club, care of the Academy Natural Sciences, Logan Square, Philadelphia.

Our observers for 1910 were as follows :

New Jersey.

Cape May, H. Walker Hand.
Vineland, Mrs. Alice K. Prince.
Downstown, W. W. Fair.
Yardville, Rachel E. Allinson.
Trenton, R. M. Abbott.
Rancocas, Emily Haines and Frances B. Stokes.
Moorestown, Anna A. Mickle.
Haddonfield, Mr. and Mrs. Robert T. Moore.
Haddonfield, S. Earle Riddle.
Camden, Julian K. Potter.

Pennsylvania.

Kennet Square, Charles J. Pennock.
West Chester, Isaac G. Roberts.
Concordville, Mrs. K. R. Styer and Miss E. P. Styer.
Westtown, William B. Evans.
Westtown, George H. Hallett, Jr.
Westtown, Geo. B. S. Dunn.
Swarthmore, Samuel C. Palmer.
Swarthmore, Miss Mary S. Pusey.
Lansdowne, Edwin L. Nicholson.

Lansdowne, Louisa M. Jacob.
Lansdowne, Friends' School.
Collingdale, Paul L. Lorrilliere.
Media, Lydia G. Allen.
Ardmore, William L. Baily.
Haverford, William J. Serrill.
Haverford, Alfred C. Redfield.
Wayne, L. S. Pearson.
Wayne, Miss Mary K. Baker.
Bryn Mawr, Miss Emily H. Thomas.
West Philadelphia, Thos. R. Hill.
Fairmount Park, Geo. H. Hallett, Jr.
Wissahickon, John R. Pickering, Jr.
Melrose Park, Samuel H. Barker.
Frankford, Richard F. Miller.
Fox Chase, Alexander Patman.
Holmesburg, Henry W. Fowler.
Frazer, Edwin B. Bartram.
Collegeville, Henry Fox.
Lopez, Otto Behr.

The temperature during the spring of 1910 showed none of the sudden rises which bring well-marked bird waves. March had the mildest temperature and least precipitation on record for the month, and arrivals were consequently early. For this month and February, two species, the Fox Sparrow and Phoebe came on exactly the average date, while all others up to March 25, were from two to five days earlier than the average. April and May were unusually cloudy, only eight clear days being recorded in each month. Five of the species arriving during these months were exactly 'on time' *i. e.*, Towhee, Myrtle Warbler, Maryland Yellowthroat, Blue-winged Warbler and Black-throated Green Warbler; of the rest forty-two species were from one to eleven days late, the average being five days, while two were early, the Thrasher one day and the Black and White Warbler two days. As is usual in cloudy weather with no 'hot waves' the birds hung back as long as possible, and then came through in force May 9-15, and many rare birds, notably the

Cape May and Golden-winged Warblers were observed quite generally throughout our territory.

The above remarks refer to the "bulk arrivals" given in the last column of the following schedule and computed by the method explained in previous reports.

*List of Other Species Reported by Observers During 1910, and
Additional Notes. Winter Notes Refer to Winter of
1909-10. Localities are in Pennsylvania
Unless Otherwise Indicated.*

Podilymbus podiceps, Pied-billed Grebe. Wayne, April 2 (*Redfield*); Camden, N. J., April 6 (*Potter*); Delair, N. J., April 24 (*Miller*).

Gavia immer, Loon. Camden, N. J., May 12 (*Potter*); Cape May, N. J., flocks on Oct. 1, 1909 and April 9, 1910 (*Hand*), Wayne, Nov. 25, 1909 (*Pearson*).

Larus delawarensis, Ring-billed Gull. Bridesburg, Feb. 23, and March 20 (*Miller*).

Larus argentatus, Herring Gull. Camden, N. J., October 24, to April 26 (*Potter*); Swarthmore, May 11 (*Palmer*.)

Larus atricilla, Black-headed Gull. Cape May, N. J., April 16 (*Hand*.)

Phalacrocorax auritus, Double-crested Cormorant. Cape May, N. J., March 21 (*Hand*); Indian River Inlet, Del., Oct. 13, 1910 (*Fowler*).

Sula bassana, Gannet. Cape May, N. J., April 19, and May 16 (*Hand*).

Mergus americanus, Merganser. Camden, N. J., Feb. 27—May 12 (*Potter*).

Querquedula discors, Blue-winged Teal. Fish House, N. J. Flock of fifteen on May 12 (*Miller*).

Branta canadensis, Canada Goose. Fish House, N. J., April 14, twenty-four and six on the Richmond marsh the same day (*Miller*).

Botaurus lentiginosus, Bittern. Pensauken Creek, N. J., April 24 and May 14 (*Miller*); Cape May, N. J., May 1 (*Hand*).

Ixobrychus exilis, Least Bittern. Bridesburg, May 1 (*Miller*).

Ardea herodias, Great Blue Heron. Pensauken Creek, N. J., April 3 (*Miller*); Camden, N. J., April 23 (*Potter*).

Nycticorax n. naevius, Night Heron. Cape May, N. J., Nov. 30, 1909 (*Hand*).

Rallus virginianus, Virginia Rail. Camden, N. J., Nov. 25, 1909 (*Potter*).

Rallus crepitans, Clapper Rail. Cape May, N. J., March 20; 28 shot on Nov. 28, 1909, and 8 on Dec. 1 (*Hand*).

Gallinula galeata, Florida Gallinule. Richmond, April 21; eggs hatching May 26 (*Miller*).

Fulica americana, Coot. Camden, N. J., April 3 (*Potter*).

Philohela minor, Woodcock. Frankford, March 7th and Nes-
haminy Falls, May 30 (*Miller*); Swarthmore, March 7 (*Palmer*);
Cape May, N. J., small flight, Nov. 25-26, 1909; another Nov.
29 (17 shot), probably 300 shot between Nov. 11 and 30.
Three young May 1, at Price's Beach (*Hand*).

Gallinago delicata, Wilson's Snipe. Bridesburg, April 2,
Torresdale, April 26 and Pensauken, N. J., April 24 (*Miller*);
Camden, N. J., March 20 (*Potter*); Westtown, March 20 (*Dunn*);
Cape May, N. J., Oct. 2, 1909 (*Hand*). large flight, Camden,
N. J., Nov. 28, 1909 (*Potter*).

Pisobia minutilla, Least Sandpiper. Camden, N. J., May 28
(*Potter*); Richmond, May 13-23 (*Miller*), Swarthmore, five on
May 14 (*Palmer*); five at Wayne, May 15 (*Pearson*).

Calidris leucophaea, Sanderling. Cape May, N. J., Nov. 13,
1909 (*Hand*).

Totanus melanoleucus, Greater Yellowlegs. Camden, N. J.,
May 8 (*Potter*); Cape May, N. J., Oct. 27 and Nov. 11, 1909
(*Hand*); Richmond, April 24 (*Miller*).

Catoptrophorus simipalmatus, Willet. Two at Dewey Beach,
Del., Oct. 13, 1910 (*Fowler*).

Numenius hudsonicus, Hudsonian Curlew. Cape May, N. J.,
April 19 (*Hand*).

Squatarola squatarola, Black-bellied Plover. Cape May, N. J.,
Nov. 13, 1909 (*Hand*).

Argialitis semipalmata, Semipalmated Plover. Cape May, N.
J., May 28 (*Potter*).

Oxyechus veriferus, Killdeer. One pair nested at Bustleton
(*Miller*); flock of thirty Sicklerville, N. J., July, 1910 (*Stone*);
Camden, N. J., Dec. 19, 1909 (*Potter*).

Colinus virginianus, Bobwhite. Vineland, N. J., June 13, nest with 17 eggs (*Prince*).

Cathartes aura, Turkey Vulture. Nest with young 10 days old, Concordville, June 3, 1909 (*Styer*).

Circus hudsonius, Marsh Hawk. Pair nesting near Tuckahoe, N. J., April 11 (*R. T. Moore*).

Archibuteo lagopus sancti-johannis, Black Hawk. Tinicum, Nov. 26, 1909 (*Pearson*).

Halizetetus leucocephalus, Bald Eagle. Westtown, May 22, (*Hallett*).

Pandion hal. carolinensis, Osprey. Cape May, N. J., Nov. 16, 1909 (*Hand*).

Cryptoglaux acadica, Saw-whet Owl. Cape May, N. J., Dec. 7, 1909 (*Hand*).

Sphyrapicus varius, Yellow-billed Sapsucker. Holmesburg, May 5 (*Miller*).

Dryobates villosus, Hairy Woodpecker. Moorestown, N. J., Oct. 22 to March 20 (*Mickle*).

Colaptes auratus, Flicker. Cape May, N. J., large flight September 25, 1909 (*Hand*); young hatched, Harrowgate, May 7 (*Miller*).

Chaetura pelagica, Chimney Swift. Moorestown, N. J., to Sept. 23, 1909 (*Mickle*); Camden, N. J., to Oct. 24, 1909 (*Potter*).

Sayornis phoebe, Phoebe. Kennett Square, Jan. 2, 1910 (*Pennock*); Eggs hatching. Pensauken, N. J., April 24 (*Miller*).

Nuttallornis borealis, Olive-sided Flycatcher. Frankford, May 1; no doubt of its identity (*Miller*).

Otocoris alpestris, Horned Lark. Camden, N. J., March 6 (*Potter*); Concordville, Dec. 30, 1909 (*Styer*).

Cyanocitta cristata, Blue Jay. None at Westtown until April 26 (*Dunn*).

Sturnus vulgaris, European Starling. Cape May, N. J., Nov. 26, 1909; nest in Stockton Hotel, April 4, 1910 (*Hand*); Moorestown, N. J., Feb. 20 (*Mickle*).

Molothrus ater, Cowbird. Flock of eight females and five males, Frankford, Dec. 31, 1909 (*Miller*); Holmesburg, on

Dec. 17, 1909 (*Fowler*); Cape May, N. J., Dec. 27-31, 1909 (*Hand*); one with Juncos, Concordville, Jan. 8 (*Styer*); two eggs in nest of the Blue-winged Warbler, Westtown, June 8 (*Evans*); two eggs in nest of Red-eyed Virco, Rose Valley, June 1 (*Palmer*).

Dolichonyx oryzivorus, Bobolink. Twenty-five at Tinicum, May 18 (*Pearson*).

Euphagus carolinus, Rusty Blackbird, one at Bridesburg, April 21 (*Miller*).

Quiscalus quiscula, Purple Grackle. Ten at Frankford, Dec. 31, 1909, and six Holmesburg, Jan. 31, 1910 (*Miller*).

Poæcetes gramineus, Vesper Sparrow. Wayne, Dec. 24, 1909 (*Pearson*).

Passerherbulus henslowi, Henslow's Sparrow. Many at Buckshutem, N. J., April 26 (*Prince*).

Zonotrichia albicollis, White-throated Sparrow. Westtown, Sept. 26-May 22 (*Hallett*); Moorestown, N. J., Oct. 7-May 14 (*Mickle*); Haddonfield, N. J., Oct. 2-May 28 (*Riddle*); Bryn Mawr, Sept. 29-May 21 (*Thomas*); Last seen, Swarthmore, May 13 (*Palmer*); Lansdowne, May 15, (*Jacob*); West Philadelphia, May 21 (*Hill*); Concordville, May 14 (*Styer*); Wayne May 22 (*Baker*); West Chester, May 17 (*Roberts*); Arrived at Lopez, April 24 (*Behr*).

Zonotrichia leucophrys, White-crowned Sparrow. Swarthmore, May 14 (*Palmer*); Yardville, N. J., May 15-16 (*Allinson*); Rancocas, N. J., May 12 (*Haines*); Frankford, May 12 (*Miller*).

Spizella monticola, Tree Sparrow. Last seen Swarthmore, March 14 (*Palmer*); West Chester, March 27 (*Roberts*); Bryn Mawr, Oct. 9-April 4 (*Thomas*).

Junco hyemalis, Junco. Last seen Swarthmore, April 10 (*Palmer*); Lansdowne, April 14 (*Jacob*); Fairmount Park, April 22 (*Hallett*); Melrose Park, April 10 (*Barker*); Concordville, May 7 (*Styer*); West Chester, Oct. 20-March 25 (*Roberts*); Westtown, Oct. 24-April 7 (*Hallett*); Haddonfield, N. J., Oct. 16-April 10 (*Riddle*).

Passerella iliaca, Fox Sparrow. Wayne, Dec. 24, 1909 (*Pearson*); Last seen at Frankford, April 6 (*Miller*).

Lanius bersalis, Northern Shrike. New Lisbon, N. J. Jan. 16 (*Emlen*).

Vermivora chrysoptera, Golden-winged Warbler. Camden, N. J., May 10 (*Potter*); Moorestown, N. J., May 3 and 5 (*Mickle*); Wayne, May 1 (*Redfield*); May 15 (*Pearson*); Kennett Square, May 15 (*Pennock*); Haverford, May 9 (*Redfield*); Concordville, May 11 (*Styer*); Westtown, May 9 (*Dunn*); Frankford, May 12 (*Miller*).

Vermivora pinus, Blue-winged Warbler. Nest and eggs at Moylan, June 4 (*Palmer*).

Vermivora rubricapilla, Nashville Warbler. Moorestown, N. J., May 13 (*Mickle*); Haverford, May 15 (*Serrill*).

Dendroica tigrina, Cape May Warbler. Camden, N. J., May 14 (*Potter*); Media, May 12 (*Allen*); Haverford, May 9 (*Redfield*); Kennett Square, May 15 (three) May 17 (*Pennock*); Westtown, May 22 (*Hallett*); Trenton, N. J., May 15 (*Abbott*); Concordville, May 14 (two) Rancocas, N. J., May 22 (*Haines*).

Dendroica coronata, Myrtle Warbler. Camden, N. J., Nov. 25, 1909 (*Potter*).

Dendroica castanea, Bay-breasted Warbler. Haverford, May 20 (*Redfield*); Kennett Square, May 15 (*Pennock*); Camden, N. J., May 22 (*Potter*).

Wilsonia pusilla, Wilson's Warbler. Camden, N. J., May 28-29 (*Potter*); Westtown, May 17 (*Dunn*); Haverford, May 12 (*Redfield*); Wayne, May 15 (*Redfield*); Concordville, May 11 (*Styer*).

Wilsonia citrea, Hooded Warbler. Moorestown, N. J., May 3 and May 13 (*Mickle*); Haverford, May 9 (*Redfield*); West Chester, May 12 (*Roberts*); Westtown, May 3 (*Dunn*) and May 9 (*Evans*).

Anthus rubescens, Titlark. Camden, N. J., April 6 (*Potter*); large flock, Concordville, March 6 (*Styer*).

Nannus hiemalis, Winter Wren. Haddonfield, N. J., Oct. 16-Dec. 28, 1909 (*Riddle*); Bryn Mawr, Oct. 1-April 4 (*Thomas*); West Chester, Oct. 20-March 27 (*Roberts*); arrived Westtown, Oct. 19, 1909 (*Hallett*); Moorestown, N. J., Oct. 26, 1909 (*Mickle*).

Thryothorus ludovicianus, Carolina Wren. More abundant than formerly at Moorestown, N. J. (*Mickle*).

Certhia familiaris americana, Brown Creeper. Bryn Mawr,

Oct. 6–April 4 (*Thomas*); Westtown, Oct. 17–March 26 (*Hallett*); arrived at Moorestown, N. J., Oct. 22, 1909 (*Mickle*).

Mimus polyglottos, Mockingbird. One at Cape May, N. J., May 16 (*Hand*); one at Berwyn, Nov. 21, 1909 (*Redfield*); one at Lindenwold, N. J., May 10 (*Miller*).

Dumetella carolinensis, Catbird. Last seen at Yardville, N. J., Oct. 10, 1909 (*Allinson*).

Regulus satrapa, Golden-crowned Kinglet. Bryn Mawr, Sept. 26–April 28 (*Thomas*); Haddonfield, N. J., Oct. 16–March 25 (*Riddle*).

Hylocichla guttata pallasii. Hermit Thrush. Last seen at Camden, N. J., Nov. 25, 1909 (*Potter*); Cape May, N. J., Dec. 27, 1909 (*Hand*.)

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingsdale, Pa.	Lansdowne, Pa.	Armore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Germanstown, N. 6; W. 1.	Melrose, Pa. N. 7; E. 2.	Fox Chase, N. 9; E. 4.	Holmesburg, N. 6; E. 7.	Frankford, Phila. N. 5; E. 5.	Bulk Arrival Phila., 1910.
Canada Goose	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3	Mar. 3
Green Heron	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28	May 28
Night Heron	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3
Spotted Sandpiper	Apr. 19	May 9	May 1	Apr. 23	May 11	Apr. 29	Apr. 25	Apr. 24	May 7	May 15	May 14	May 14	May 14	May 10	May 8	Apr. 5	Apr. 5
Solitary Sandpiper	May 21	May 12	May 12	May 12	May 11	May 7	May 7	May 8	May 8	May 15	May 14	May 14	May 14	May 10	May 8	Apr. 24	Apr. 24
Killdeer	Mar. 4	Feb. 19	Mar. 2	Mar. 2	Mar. 13	Mar. 24	Mar. 24	Mar. 5	Mar. 5	May 13	May 13	May 13	May 13	May 10	May 8	Mar. 10	Mar. 10
Dove	Mar. 20	Mar. 19	Apr. 3	May 3	Mar. 15	Mar. 25	Mar. 25	Mar. 21	Mar. 1	May 3	May 3	May 3	Res.	Mar. 20	Mar. 13	Mar. 29	Mar. 29
Osprey	Apr. 3	Mar. 21	Mar. 21	May 22	Mar. 22	May 21	Apr. 15	Apr. 4	Feb. 26	Mar. 1	May 15	May 15	May 21	May 22	Mar. 15	Apr. 9	Apr. 9
Turkey Vulture	Mar. 11	May 7	May 22	May 29	Mar. 23	May 21	May 21	May 15	May 21	May 15	May 15	May 15	May 21	May 22	Mar. 27	May 24	May 24
Yellow-billed Cuckoo	Apr. 3	Res.	Mar. 23	Mar. 27	Apr. 10	Mar. 11	Mar. 22	Mar. 16	May 15	May 15	May 15	May 15	Apr. 7	Mar. 28	May 1	May 26	May 26
Black-billed Cuckoo	Apr. 3	Res.	Mar. 23	Mar. 27	Apr. 10	Mar. 11	Mar. 22	Mar. 16	May 15	May 15	May 15	May 15	Apr. 7	Mar. 28	May 1	May 26	May 26
Kingfisher	Apr. 3	Res.	Mar. 23	Mar. 27	Apr. 10	Mar. 11	Mar. 22	Mar. 16	May 15	May 15	May 15	May 15	Apr. 7	Mar. 28	May 1	May 26	May 26
Yellow-bellied Sapsucker	Apr. 3	Res.	Mar. 23	Mar. 27	Apr. 10	Mar. 11	Mar. 22	Mar. 16	May 15	May 15	May 15	May 15	Apr. 7	Mar. 28	May 1	May 26	May 26
Red-headed Woodpecker	Apr. 3	Res.	Mar. 23	Mar. 27	Apr. 10	Mar. 11	Mar. 22	Mar. 16	May 15	May 15	May 15	May 15	Apr. 7	Mar. 28	May 1	May 26	May 26
Flicker	Mar. 21	Res.	Res.	Mar. 24	Res.	Mar. 11	Mar. 18	Feb. 12	Feb. 25	Mar. 20	Mar. 20	Mar. 20	Res.	Mar. 28	Mar. 25	Feb. 16	Mar. 20
Whip-poor-will	Apr. 30	May 28	May 28	May 13	May 13	May 21	May 21	May 9	May 3	May 15	May 15	May 15	May 10	May 10	May 10	May 15	May 15
Nighthawk	Apr. 27	Apr. 30	Apr. 24	Apr. 24	Apr. 25	May 7	Apr. 27	Apr. 30	Apr. 29	May 15	May 15	May 15	May 15	May 15	May 15	Apr. 24	Apr. 24
Chimney Swift	May 18	May 7	May 14	May 11	May 12	May 21	May 21	May 15	May 18	May 15	May 15	May 15	May 15	May 15	May 15	May 24	May 24
Hummingbird	May 3	May 15	May 10	May 10	May 10	May 21	May 21	May 12	May 15	May 15	May 15	May 15	May 15	May 15	May 15	May 26	May 26
Kingbird	May 7	May 7	May 3	May 10	May 3	May 5	May 11	May 1	May 3	May 15	May 15	May 15	May 13	May 13	May 13	May 5	May 5
Crested Flycatcher	Mar. 24	Mar. 19	Mar. 20	Mar. 20	Mar. 9	Apr. 3	Mar. 26	Mar. 19	Mar. 4	May 20	Mar. 26	Mar. 20	Mar. 27	Mar. 28	Mar. 28	Mar. 11	Mar. 20
Phoebe	Mar. 24	Mar. 19	Mar. 20	Mar. 20	Mar. 9	Apr. 3	Mar. 26	Mar. 19	Mar. 4	May 20	Mar. 26	Mar. 20	Mar. 27	Mar. 28	Mar. 28	Mar. 11	Mar. 20

*The relative positions of the stations are indicated by the number of miles, N. or S. and E. or W., that each one is distant from Philadelphia, Pa., i. e., its latitude and longitude with reference to the City Hall.

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Germanstown, Phila.	Melrose, Pa.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Bulk Arrival Phila., 1910.
Wood Pewee	May 7	May 15	May 22	. . .	May 20	May 21	May 19	May 25	May 18	May 21	May 15	. . .	. . .	. . .	. . .	May 12	May 19
Acadian Flycatcher . . .	May 17	. . .	May 1	. . .	May 4	. . .	. . .	May 1	. . .	. . .	May 7	. . .	. . .	. . .	. . .	May 24	
Least Flycatcher	May 17	. . .	May 23	. . .	May 13	. . .	. . .	May 15	. . .	. . .	May 7	. . .	. . .	May 20	. . .	May 7	May 15
Bobolink . . . . .	. . .	Apr. 23	. . .	Mar. 20	Feb. 28	Mar. 1	Apr. 6	Mar. 12	. . .	Mar. 20	Apr. 24	. . .	. . .	Mar. 28	Jan. 26	Feb. 21	Mar. 25
Cowbird . . . . .	. . .	. . .	. . .	Mar. 20	Feb. 28	Mar. 1	Apr. 24	Mar. 5	. . .	Mar. 20	Mar. 26	. . .	Mar. 13	Mar. 28	Mar. 13	Mar. 3	Mar. 2
Red-winged Blackbird . .	Feb. 27	Feb. 22	Mar. 2	Mar. 20	Feb. 28	Feb. 27	Apr. 24	Mar. 5	. . .	Mar. 20	Mar. 26	. . .	Mar. 13	Mar. 28	Mar. 13	Mar. 3	Mar. 2
Meadow Lark	Res.	Res.	Res.	Mar. 6	Res.	Mar. 11	Res.	Feb. 13	Mar. 4	Res.	Mar. 26	. . .	Res.	Mar. 15	Mar. 6	Res.	Mar. 4
Orchard Oriole	May 7	May 15	May 14	. . .	May 3	May 12	. . .	May 15	. . .	May 14	. . .	May 13	. . .	May 10	May 8	May 2	May 10
Baltimore Oriole	May 10	May 21	May 8	May 3	May 8	May 16	May 7	May 1	May 9	May 6	. . .	. . .	May 9	. . .	May 4	May 10	May 8
Rusty Blackbird	Mar. 13	. . .	Mar. 27	. . .	Apr. 1	. . .	Mar. 24	Mar. 24	. . .	May 1	. . .	. . .	. . .	Mar. 4	. . .	Mar. 21	
Purple Grackle	Feb. 18	Feb. 28	Mar. 2	Feb. 20	Feb. 22	Feb. 26	Feb. 16	Feb. 22	Feb. 25	Mar. 5	Mar. 20	Mar. 6	Feb. 27	Mar. 4	Feb. 23	Feb. 21	Feb. 23
Vesper Sparrow	Mar. 13	. . .	Mar. 25	Mar. 27	Mar. 25	Mar. 28	. . .	Mar. 19	. . .	Mar. 26	May 1	. . .	. . .	Mar. 28	Mar. 27	Mar. 23	Mar. 25
Savanna Sparrow	May 13	. . .	Apr. 10	. . .	May 7	May 7	. . .	Mar. 26	. . .	May 1	. . .	. . .	. . .	Mar. 28	Mar. 27	Mar. 23	Mar. 25
Grasshopper Sparrow . .	May 13	. . .	May 14	Mar. 29	Mar. 30	Apr. 7	. . .	May 15	. . .	May 1	. . .	. . .	. . .	Mar. 3	Apr. 1	Mar. 29	Mar. 28
Chipping Sparrow	Mar. 28	Mar. 25	Mar. 26	Mar. 29	Mar. 30	Apr. 6	Mar. 25	Mar. 29	Mar. 28	Mar. 28	Mar. 20	. . .	Apr. 1	Mar. 3	Apr. 1	Mar. 29	Mar. 28
Field Sparrow	Mar. 27	Mar. 6	Feb. 20	Mar. 25	Mar. 25	Mar. 28	Mar. 25	Feb. 12	. . .	Mar. 26	Apr. 22	Apr. 14	Mar. 24	Mar. 28	Mar. 13	Res.	Mar. 25
Swamp Sparrow . . . . .	. . .	. . .	Mar. 27	. . .	Apr. 15	. . .	Apr. 15	Apr. 15	. . .	May 15	. . .	. . .	. . .	Apr. 20	. . .	Apr. 21	
Fox Sparrow	Feb. 27	Mar. 6	Mar. 19	Mar. 27	Mar. 7	Mar. 20	Mar. 3	Mar. 4	Mar. 4	Mar. 26	Mar. 5	Mar. 6	. . .	Mar. 28	Mar. 13	Mar. 2	Mar. 6
Chewink	Apr. 19	Apr. 30	Apr. 16	Apr. 14	Apr. 29	Apr. 29	Apr. 12	Apr. 2	May 1	Apr. 30	Apr. 22	May 3	May 1	Apr. 20	Apr. 24	Apr. 22	Apr. 19
Rose-breasted Grosbeak .	May 5	. . .	. . .	. . .	May 14	. . .	May 14	May 9	. . .	May 15	May 11	. . .	. . .	. . .	. . .	Apr. 23	May 9
Indigobird	May 14	May 7	May 21	May 12	May 11	May 16	May 12	May 15	May 10	May 12	May 14	. . .	May 13	. . .	. . .	May 9	May 12
Scarlet Tanager	May 13	May 15	May 10	May 9	May 9	May 15	May 6	May 9	May 13	May 15	. . .	. . .	May 15	May 10	May 13	May 6	May 12
Purple Martin	Apr. 5	May 21	May 8	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	Mar. 28	Apr. 20	Apr. 19	

NAME.	Moorestown, N. J.	Haddonfield, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philadelphia.	Germanstown, Phila.	Melrose, Pa.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Bulk Arrival Phila., 1910.
Cliff Swallow	May 10	May 8	May 8	May 8	May 4	May 4	May 20	May 28	May 28	May 1	May 28	May 28	May 1	May 1	May 1	May 24	May 24
Barn Swallow	Apr. 30	Apr. 23	Apr. 24	May 4	May 10	May 7	May 20	Apr. 28	May 1	May 1	Apr. 28	May 1	May 1	May 1	May 1	Apr. 9	Apr. 30
Tree Swallow	Apr. 25	May 7	Apr. 21	May 10	May 10	May 23	May 20	May 1	May 1	May 1	May 1	May 1	May 1	May 1	May 1	May 4	May 1
Bank Swallow	May 28	May 28	Apr. 24	Apr. 23	Apr. 23	Apr. 23	May 20	May 1	May 1	May 1	May 1	May 1	May 1	May 1	May 1	Apr. 16	Apr. 23
Rough-winged Swallow	May 28	May 28	Apr. 24	Apr. 10	Apr. 15	Apr. 15	May 20	May 1	May 1	May 1	May 1	May 1	May 1	May 1	May 1	Apr. 24	Apr. 24
Cedarbird	May 27	Apr. 10	Apr. 26	May 20	May 20	May 20	May 20	May 24	May 24	May 24	May 24	May 24	May 24	May 24	May 24	Apr. 6	Apr. 6
Red-eyed Vireo	May 13	May 7	May 15	May 15	May 4	May 21	May 15	May 12	May 10	May 12	May 15	May 15	May 16	May 9	May 15	May 15	May 12
Warbling Vireo	May 26	May 7	May 15	May 15	May 3	May 3	May 11	May 8	May 8	May 15	May 11	May 11	May 15	May 15	May 15	May 24	May 11
Yellow-throated Vireo	May 3	May 12	May 12	May 13	May 13	May 13	May 15	May 12	May 12	May 15	May 22	May 22	May 15	May 15	May 15	May 24	May 14
Solitary Vireo	May 13	Apr. 23	May 11	May 24	May 24	May 21	May 24	May 7	May 7	May 15	May 3	May 3	May 15	May 15	May 15	May 5	May 11
White-eyed Vireo	Apr. 19	Apr. 23	Apr. 26	Apr. 26	May 4	May 5	Apr. 24	Apr. 21	Apr. 28	May 1	Apr. 26	May 1	Apr. 24	Apr. 20	Apr. 24	May 12	Apr. 24
Black and White Warbler	May 13	May 5	May 4	May 11	May 13	May 13	May 11	May 8	May 9	May 15	May 22	May 13	May 8	May 8	May 8	May 3	May 6
Worm-eating Warbler	May 13	May 5	May 4	May 11	May 13	May 13	May 11	May 8	May 9	May 15	May 22	May 13	May 8	May 8	May 8	May 3	May 6
Blue-winged Warbler	May 13	May 5	May 4	May 11	May 13	May 13	May 11	May 8	May 9	May 15	May 22	May 13	May 8	May 8	May 8	May 3	May 6
Parula Warbler	May 13	May 5	May 4	May 11	May 13	May 13	May 11	May 8	May 9	May 15	May 22	May 13	May 8	May 8	May 8	May 3	May 6
Yellow Warbler	May 4	Apr. 23	Apr. 26	Apr. 30	May 1	Apr. 2	May 2	May 15	May 15	May 22	May 7	May 7	May 15	May 15	May 15	Apr. 24	Apr. 30
Black-throated Blue Warbler	May 5	May 7	May 11	May 15	May 13	May 11	May 11	May 15	May 15	May 22	May 9	May 9	May 15	May 15	May 15	May 12	May 9
Myrtle Warbler	Apr. 19	Apr. 23	Apr. 16	Apr. 27	Apr. 15	Apr. 29	Apr. 24	Apr. 21	Apr. 28	May 1	Apr. 26	May 1	May 1	May 1	May 1	Apr. 13	Apr. 24
Magnolia Warbler	May 16	May 15	May 11	May 11	May 11	May 11	May 11	May 9	May 9	May 15	May 14	May 14	May 15	May 15	May 15	May 15	May 11
Chestnut-sided Warbler	May 14	May 14	May 14	May 15	May 11	May 11	May 14	May 9	May 9	May 15	May 14	May 14	May 15	May 15	May 15	May 13	May 14
Black-poll Warbler	May 10	May 21	May 21	May 12	May 21	May 21	May 19	May 14	May 9	May 22	May 14	May 22	May 22	May 22	May 22	May 20	May 19
Blackburnian Warbler	May 14	May 21	May 28	May 15	May 17	May 17	May 19	May 15	May 10	May 22	May 15	May 22	May 22	May 22	May 22	Apr. 26	May 15
Black-throated Green Warbler	Apr. 25	May 21	May 14	May 12	May 4	May 4	May 11	May 7	May 3	May 1	May 2	May 2	May 1	May 1	May 1	May 3	May 4

NAMES.

Cape May, N. J. E. 13; S. 72.	Vineland, N. J. E. 7; S. 32.	Downtown, N. J. E. 11; S. 28.	Kennett Square, Pa. W. 30; S. 8.
Mar. 26	Res.	Mar. 23	
Apr. 18	Apr. 18	Apr. 20	
May 2	Apr. 27	May 8	Apr. 23
May 14	May 10	May 14	May 17
May 1	May 22	May 3	May 15
May 1	May 22	May 8	May 15
Apr. 23			
May 11			
			Apr. 2
Res.	Mar. 3	Mar. 16	
Apr. 25	May 7	May 10	May 2
Feb. 23	Mar. 3	Mar. 24	Feb. 22
Apr. 1	Mar. 28	Mar. 28	Apr. 1
	Apr. 26	Mar. 27	
May 8	May 28		May 15
	May 15	May 19	
Apr. 10	Mar. 5	Apr. 26	Apr. 15
Apr. 10	Mar. 9	May 18	
	May 10	May 11	
May 4	May 3	May 8	
			May 15
		May 7	
Apr. 16	Apr. 22	Apr. 24	Apr. 27
			May 15
Apr. 28	Apr. 19	May 6	
Apr. 28	Apr. 26	Apr. 19	Apr. 17
May 2	Apr. 28	Apr. 26	Apr. 25
		May 22	May 15
			Apr. 4
Res.	Res.	Feb. 7	Jan. 20
Res.	Res.	Feb. 23	



NAMES.

	Cape May, N. J. E. 13; S. 72.	Vineyard, N. J. E. 7; S. 32.	Darvinstown, N. J. E. 11; S. 28.	Kennett Square, Pa. W. 30; S. 8.	Concordville, Pa. W. 20; S. 5.	Westtown, Pa. W. 21; S. 2.	West Chester, Pa. W. 24; N. 0.	Frazer, Pa. W. 21; N. 6.	Rancocas, N. J. E. 16; N. 4.	Yardville, N. J. E. 25; N. 15.	Trenton, N. J. E. 23; N. 16.	Collegeville, Pa. W. 16; N. 16.	Lopez, Pa. W. 60; N. 103.
Flicker.....	Mar. 26	Res.	Mar. 23	.....	Res.	Mar. 20	Mar. 23	Mar. 19	Mar. 8	Feb. 27	.....	Mar. 2	Mar. 26
Whip-poor-will.....	Apr. 18	Apr. 20	.....	Apr. 19	May 5	May 14	Jun. 10	.....	May 15	May 16	May 11	.....	May 16
Nighthawk.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 21	.....	May 16
Chimney Swift.....	May 2	Apr. 27	May 8	Apr. 23	Apr. 22	Apr. 26	Apr. 26	Apr. 29	Apr. 23	Apr. 28	Apr. 30	May 2	May 22
Hummingbird.....	May 14	May 10	May 14	May 17	May 11	May 11	May 11	.....	Apr. 30	May 10	.....	.....	.....
Kingbird.....	May 1	May 22	May 3	May 15	Apr. 30	May 7	May 1	May 1	May 8	May 4	May 11	.....	May 19
Great-crested Flycatcher.....	May 1	May 22	May 8	May 15	May 6	May 6	May 3	.....	May 8	May 13	May 10	May 10	.....
Phoebe.....	.....	Apr. 23	.....	.....	Mar. 6	Mar. 12	Mar. 23	Mar. 20	Mar. 26	Mar. 29	Mar. 23	Mar. 30	Mar. 25
Bobolink.....	May 11	.....	.....	May 11	.....	May 13	.....	.....	.....	May 12	.....	.....	.....
Cowbird.....	.....	.....	Apr. 2	.....	Mar. 2	Mar. 8	Mar. 23	Mar. 20	.....	Apr. 23	Mar. 4	Apr. 4	.....
Red-winged Blackbird.....	Res.	Mar. 2	Mar. 16	.....	Mar. 2	Feb. 27	Mar. 4	Mar. 5	Mar. 1	Apr. 1	Feb. 27	Mar. 16	Mar. 4
Baltimore Oriole.....	Apr. 25	May 7	May 10	May 2	Apr. 19	May 7	May 5	Mar. 6	May 9	May 4	May 4	May 2	May 14
Purple Grackle.....	Feb. 23	Mar. 3	Mar. 24	Feb. 22	Feb. 16	Feb. 16	Feb. 19	Feb. 28	Feb. 17	Feb. 27	.....	Feb. 23	.....
Chipping Sparrow.....	Apr. 1	Mar. 28	Mar. 28	Apr. 1	Mar. 13	Mar. 27	Mar. 29	Mar. 27	Mar. 15	Mar. 29	Mar. 27	Apr. 4	Apr. 16
Chewink.....	Apr. 1	Apr. 26	Mar. 27	.....	Apr. 19	Apr. 30	Apr. 24	Apr. 27	Apr. 22	Apr. 23	Apr. 6	May 4	Apr. 22
Indigobird.....	May 8	May 28	.....	May 15	May 11	May 10	May 15	.....	May 11	May 8	May 17	.....	.....
Scarlet Tanager.....	.....	May 15	May 19	.....	.....	May 9	May 13	.....	May 19	May 10	May 11	.....	May 18
Purple Martin.....	Apr. 10	Mar. 5	Apr. 26	Apr. 15	.....	May 9	Apr. 4	.....	.....	.....	May 2	Apr. 18	.....
Barn Swallow.....	Apr. 10	Mar. 9	May 18	.....	Apr. 18	Apr. 28	Apr. 24	Apr. 24	Apr. 25	Apr. 18	Apr. 19	Apr. 20	Apr. 27
Red-eyed Vireo.....	.....	May 10	May 11	.....	Apr. 30	May 7	May 9	.....	May 10	.....	.....	.....	May 11
Black and White Warbler.....	May 4	May 3	May 8	.....	May 2	Apr. 30	Apr. 24	.....	Apr. 24	May 5	Apr. 24	.....	May 2
Chestnut-sided Warbler.....	.....	.....	.....	May 15	May 11	May 9	May 13	.....	May 11	.....	May 11	.....	May 10
Ovenbird.....	.....	May 7	.....	.....	Apr. 29	Apr. 26	Apr. 27	May 8	May 8	May 15	May 7	.....	May 9
Maryland Yellowthroat.....	Apr. 16	Apr. 22	Apr. 24	Apr. 27	Apr. 26	Apr. 27	Apr. 25	May 1	Apr. 26	Apr. 26	Apr. 26	.....	.....
Chat.....	.....	.....	May 15	May 11	May 9	May 14	.....	.....	May 22	May 10	May 13	.....	.....
Catbird.....	Apr. 28	Apr. 19	May 6	.....	May 2	May 5	Apr. 30	May 5	May 4	May 5	Apr. 28	May 4	May 20
Brown Thrasher.....	Apr. 28	Apr. 26	Apr. 19	Apr. 17	Apr. 19	Apr. 28	Apr. 24	.....	Apr. 18	May 1	Apr. 20	Apr. 13	May 2
House Wren.....	May 2	Apr. 28	Apr. 26	Apr. 25	Apr. 19	Apr. 30	Apr. 27	.....	Apr. 16	May 8	Apr. 27	May 5	May 14
Wood Thrush.....	.....	.....	May 22	May 15	May 1	May 1	Apr. 30	.....	May 9	May 5	May 5	.....	.....
Hermit Thrush.....	.....	.....	Apr. 4	.....	Apr. 16	Apr. 3	Apr. 5	.....	Apr. 6	.....	Apr. 5	Apr. 5	Apr. 5
Robin.....	Res.	Res.	Feb. 7	Jan. 20	Feb. 15	Feb. 16	Feb. 27	Feb. 27	Feb. 15	Mar. 3	.....	Mar. 3	Mar. 2
Bluebird.....	Res.	Res.	Feb. 23	.....	Feb. 27	Mar. 2	Feb. 27	Feb. 27	Feb. 19	Feb. 27	.....	Feb. 23	Mar. 3

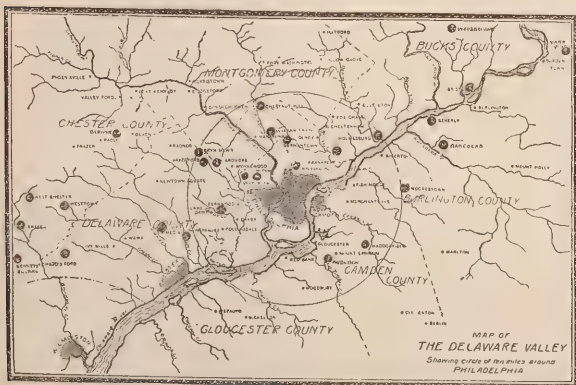


TABLE 11.

SPRING MIGRATION, 1910.

EARLIEST DATES OF ARRIVAL OF THIRTY-TWO SPECIES AT THIRTEEN STATIONS OUTSIDE THE PHILADELPHIA CIRCLE.

Abstract of the Proceedings of the Delaware Valley Ornithological Club, 1910.

January 6, 1910. Twentieth Annual Meeting. Present forty-six members and four visitors. The election of officers for the ensuing year resulted as follows:

President. Samuel N. Rhoads.

Vice-President. Stewardon Brown.

Secretary. J. Fletcher Street.

Treasurer. Samuel Wright.

Letters were read from absent members Capt. Frank B. Eastman, Dr. Spencer Trotter and C. J. Hunt.

The incoming president made a few introductory remarks, upon the successful completion of twenty years of existence which the Club was gathered together to celebrate; and then introduced Dr. A. K. Fisher of Washington, the guest of the Club who spoke upon the importance of collecting specimens on the part of young ornithologists. Dr. Hughes followed stating his preference for study through an opera glass, but not until the specimen had been shot, unless perchance he had collected it in the egg. Mr. Stone was the last speaker and he reviewed the work of the Club since its organization in 1890 dealing mainly with personal recollections of members and their exploits. His paper had been printed and was later distributed as a souvenir of the evening. After being photographed the meeting adjourned to partake of a luncheon which had been provided, and the night passed in reminiscences and discussion of collecting trips of days gone by.

January 20, 1910. Fifteen members present and ten visitors, Vice-President Brown in the chair.

Mr. Samuel C. Palmer who had been attending Harvard University read a paper entitled "Notes on Cambridge Birds." A letter was read from Mr. William Brewster congratulating the Club on its twenty years of activity. Mr. Stone spoke of the

death of Dr. R. Bowdler Sharpe of the British Museum and briefly reviewed his work.

Mr. Baily reported European Starlings at Penn's Manor, Pa. Mr. Street read a list of twenty-five species observed at Cape May, N. J. January 16.

February 3, 1910.—Fourteen members present. Mr. Stone addressed the Club on "A Review of the Theories of Bird Migration"; general discussion followed. Mr. DeHaven exhibited an abnormal skull of the Bobwhite from Lake Apopka, Florida. Mr. Rehn reported a European Starling shot at Ocean View, Cape May Co., N. J.

February 17, 1910.—Twelve members present. Mr. Carter spoke on "White Mountain Birds in July," giving an entertaining account of a trip through this part of New Hampshire, during the past summer. Mr. Morris reported that the old roosting-place of the crows near Doylestown was deserted, while on February 13 he had observed a large flock of Starlings associated with Crows at Olney. Mr. Fowler reported another flock of fifty Starlings at Holmesburg early in January.

Mr. Carter exhibited an adult Cooper's Hawk killed near West Chester, Pa., Feb. 13, 1910, and called attention to the barred breast and orange iris.

March 3, 1910.—Eighteen members present. Alfred C. Redfield, Wm. E. Roberts and L. S. Pearson, were elected active members, and E. L. Poole, S. Earle Riddle, C. W. Palmer, J. D. Sudders and Francis Windle, associates. The resignation of Rev. J. H. Hackenberg was accepted.

Letters were read from Wm. S. Essick, describing the occurrence of Snow Buntings near Orbisonia, Pa., from Mr. R. C. Harlow, reporting the collecting of a set of Raven's eggs near State College, Pa., and from Dr. Spencer Trotter, who is still traveling in Europe. Mr. Redfield made a communication on "The Herons of Cape Cod, Mass.," illustrating his remarks with beautiful lantern slides of the Night Heron, Green Heron and Bittern. Mr. Rhoads spoke of the winter roosting of Red-wing Blackbirds at Cambridge, Md., and Mr. Morris reported Cowbirds wintering near Atlantic City, N. J.

March 17, 1910.—Nineteen members present. As suited to the day a series of specimens illustrating birds of green plumage was exhibited and the comparative rarity of bright green in bird coloration was discussed. A paper by Dr. Weygandt entitled "A Zero Day on Broadhead's Creek" was read.

April 7, 1910.—Eighteen members and two visitors present, including Dr. Jonathan Dwight, Jr., of New York City. Mr. Brown spoke on "Impressions of Jamaica and its Birds," treating of observations about Mandeville during a trip made last month. Mr. Harlow gave an informal account of the finding of the Raven's nest near State College. He also reported an Evening Grosbeak seen at South Sterling, Wayne Co., Pa., during December, 1909, an Orange-crowned Warbler shot at State College, May 12, 1909, and a Bald Eagle's nest near Peach Bottom, in York County, Pa., March 22, 1910, which contained two eggs.

April 21, 1910.—Eighteen members present and one visitor. Several bird biographies intended for the proposed book on the birds of this region were read, as follows: "Turkey Vulture" by Mr. Moore, "Field Sparrow" by Dr. Weygandt, "Hermit Thrush" by Mr. Stone, "Olive-backed Thrush" by Mr. Bailly, "Vesper Sparrow" by Mr. Rhoads.

May 5, 1910.—Eighteen Members and one visitor present. Mr. Pennock spoke on "Winter Bird Notes from Pinehurst N. C." He also read extracts from an old report of Wm. Penn dated 1683 and from the Literary Casket published in Chester Co., Pa. in 1830; relating to the abundance of Wild Turkeys and Wild Pigeons. Mr. Street reported Wild Turkeys seen at Goldsborough, Va. on April 23.

May 19, 1910.—Thirty members and two visitors present.

Mr. Redfield addressed the club on "Photographing the Warblers" illustrating his remarks by lantern slides of all the common breeding species of Montgomery Co., Pennsylvania.

Mr. Morris described "Another Trip down the Blackwater River, Va." also with lantern slides.

Cape May Warblers were reported at West Chester, Pa., by Messrs. Windle and Sharples May 11 to 15, often several a day and two at Concordville, Pa., May 15 observed by Mrs. Styer were reported.

October 6, 1910.—Sixteen members and four visitors present. Mr. Stone reported the capture of five specimens of Philadelphia Vireo (*Vireosylva philadelphica*) at Walnut Hill, September 10 and 18, and exhibited and commented upon the long-looked-for A. O. U. Check List of N. A. Birds. Dr. Trotter spoke briefly of his experience with the Nightingale in Italy.

October 20, 1910.—Fourteen members and one visitor present. The resignation of Mr. John H. Steele was accepted. Mr. Carter addressed the Club on "Summer Birds of Syracuse, N. Y." He found the Florida Gallinule and the Green-winged Teal nesting on the Montezuma marshes. He also described the habits of Bald Eagles observed on Lake Ontario. Mr. Moore reported a White Heron (*Ardea egretta*) at Hammonton, N. J., July 26, 1899.

November 3, 1910.—Fifteen members present. Messrs. Robert Adams, Jr., Geo. W. Stuart, Samuel A. Tatnall, Dr. J. P. Ball and Dr. S. Parke Longenecker were elected associate members.

Dr. Spencer Trotter spoke on the birds observed during a year's absence in Europe, and discussed especially the songs of the Nightingale, Blackcap and Blackbird.

November 17, 1910.—Fourteen members present. Mr. Street addressed the club on "Spring Migration along the James River, Va.," describing a canoe trip from Lynchburg to Richmond.

The A. O. U. meeting, which closed to-day in Washington, was discussed by several members who had just returned from the sessions.

December 1, 1910.—Fifteen members and three visitors present—held in conjunction with the Ornithological Section of the Academy. A collection of sixty mounted birds was on exhibi-

tion, which was presented to the Club, on behalf of Mr. Francis W. Rawle for the D. V. O. C. collection.

Mr. S. N. Rhoads exhibited a Starling obtained at Audubon, N. J., Nov. 24, 1910, and presented it to the Club. Dr. Tucker reported two Black Ducks seen at Cape May, N. J., August 15, 1910.

A Gnat-catcher was reported shot at Walnut Hill, Pa., by Robert E. Morris, April 10, 1910, specimen examined by Mr. Stone; and a letter from Miss M. E. Swing was read describing a nest of this species at Bridgton, N. J., found May 9.

December 15, 1910.—Nineteen members present. Mr. Harlow described "Some Nesting Trips in Western Pennsylvania" referring especially to the vicinity of State College. He found both the Sora and Virginia Rails nesting on an extensive marsh in that neighborhood on May 27, 1909 and June 6, 1910.

Mr. Pennock described a trip to Delaware City, Del., where on the meadows bordering the Delaware River a large flock of Shore Larks (*Otocoris alpestris*) was found, among which were a few Lapland Longspurs (*Calcarius lapponicus*) and Prairie Horned Larks (*Otocoris a. praticola*) specimens of all three were obtained. Mr. Moore reported a Kingfisher at Haddonfield, N. J., December 9 and Mr. Baily reported one wintering at Mt. Pocono, Pa.

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Bird Club Notes

The Club is indebted to the Academy of Natural Sciences of Philadelphia for the use of the half-tone block of the old Academy building. This was the "Academy" of 1826 to 1840, to which Townsend brought back his Pacific Coast birds and where Audubon made his first examination of them. Here too Gambel must have come with Nuttall to make his first acquaintance with men of science. All efforts to find a portrait of Gambel have failed ; probably none ever existed.

* * *

The Club has held sixteen meetings during the year in which seventy-one members participated. The average attendance was nineteen.

* * *

At the A. O. U. meeting in Washington, the Club was represented by Messrs. Moore, Morris, Rhoads, Essick, Pennock and Stone, and by Messrs. Miller and Todd, Corresponding Members.

* * *

College courses have deprived the Club of the services of Redfield, who is at Harvard, and of Harlow and Harrower at State College.

Rhoads was in Europe during the Summer, Brown in Jamaica, Roberts in British Columbia, Robinson in California, and Rehn in various parts of the West.

* * *

William Earl Dodge Scott, long connected with ornithological activities at Princeton University, died at Saranac Lake, N. Y., on August 22, 1910. Mr. Scott was well known as a writer on birds, not only of New Jersey but of various other parts of the world, especially Arizona, Florida and Jamaica. The collection at Princeton and various groups at the Museum of Comparative Zoology are evidence of his skill as a taxidermist.

The publication of the Report on the Ornithology of the Princeton Patagonian Expedition which Mr. Scott was engaged upon at the time of his death in conjunction with Dr. R. Bowdler Sharp also deceased, will be continued under the editorship of Mr. Witmer Stone.

OFFICERS AND MEMBERS

OF THE

Delaware Valley Ornithological Club.

1911.

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Died.

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WALTER D. BUSH, Corresponding member.....	August 11, 1904
JOHN W. DETWILLER, M. D., Corresponding member	September 26, 1898
LARUE K. HOLMES, Corresponding member	May 10, 1900
JOSIAH HOOPER, Corresponding member	January 16, 1904
AUGUST KOCH, Corresponding member	February 15, 1907
GILBERT H. MOORE, Associate member	May 28, 1899
FREDERICK N. OWEN, Associate member	December 27, 1905
WILLIAM PATTERSON, Corresponding member	August 27, 1900
EDWIN SHEPPARD, Associate member	April 7, 1904
WILLIAM W. SMITH, Associate member	July 3, 1892
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CASSINIA

A BIRD ANNUAL

GITHENS 1922



PROCEEDINGS
OF THE
DELAWARE
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ORNITHOLOGICAL CLUB
OF PHILADELPHIA

1911

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CASSINIA

An Annual Devoted to the Ornithology of
Pennsylvania, New Jersey, and Delaware

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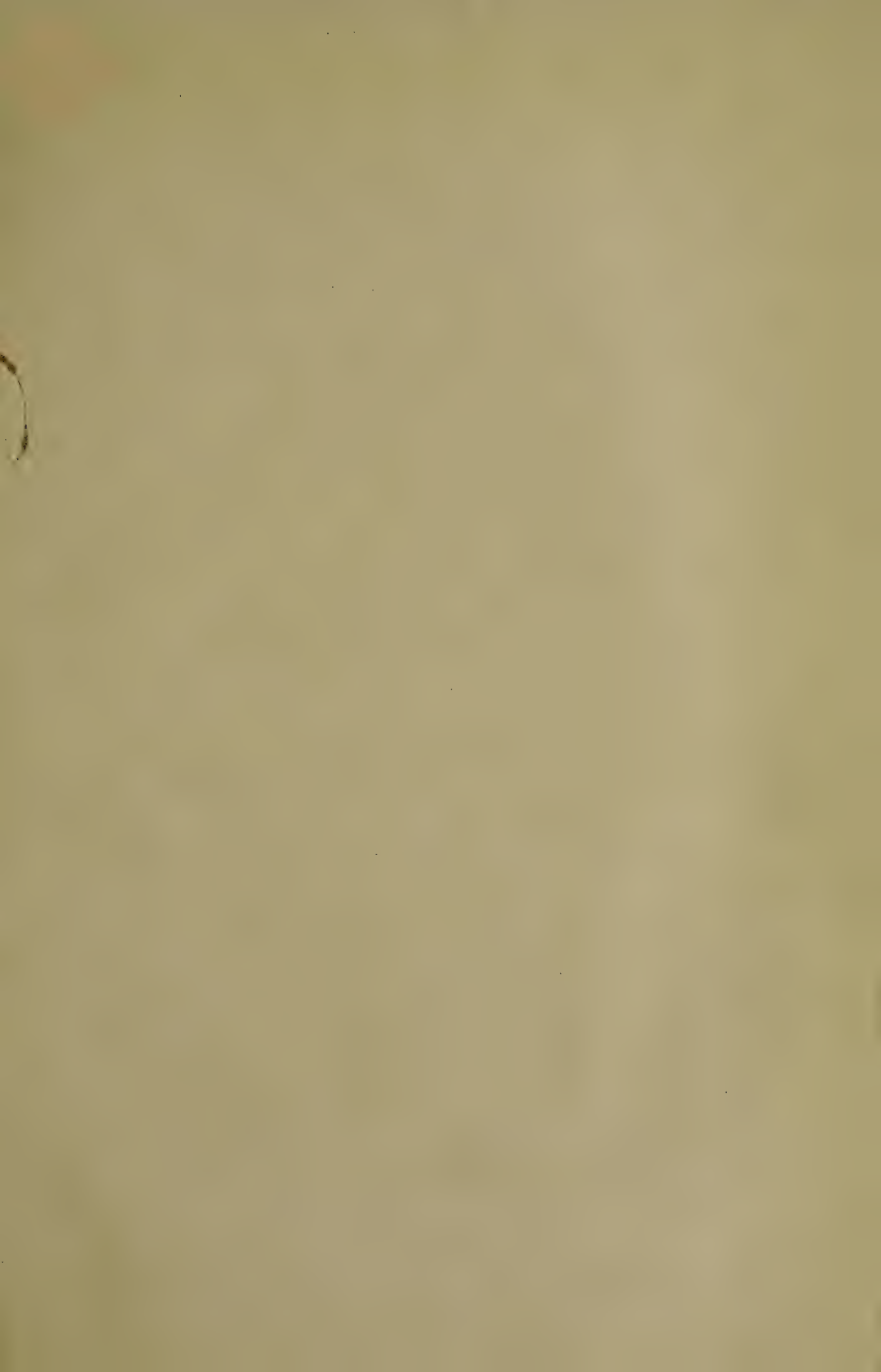
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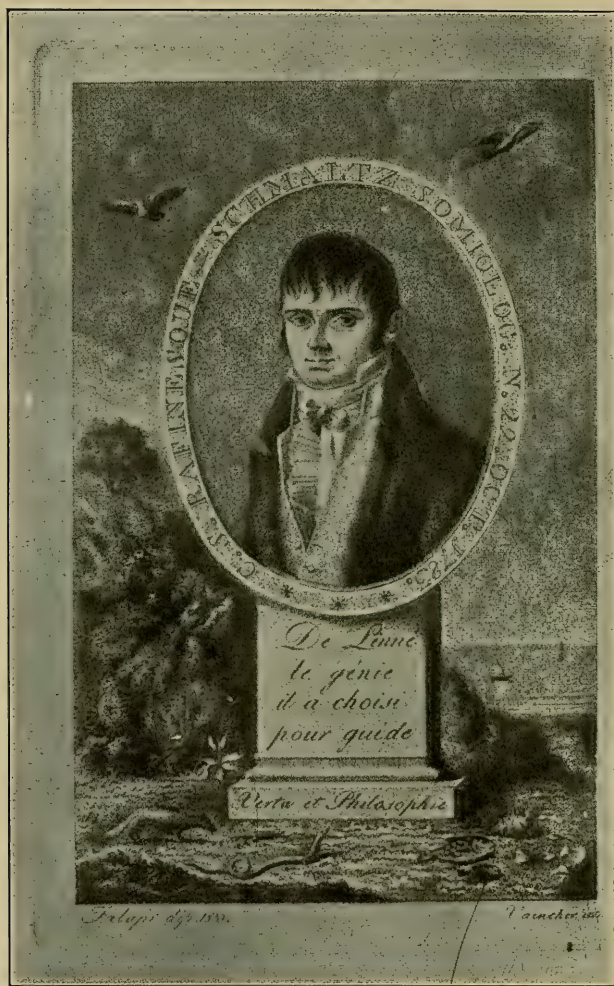
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CONSTANTINE S. RAFINESQUE

CASSINIA

PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB

No. XV.

PHILADELPHIA, PA.

1911

Constantine S. Rafinesque as an Ornithologist

BY SAMUEL N. RHOADS

Who was Rafinesque, and what had he to do with ornithology? These would have been very reasonable queries for a birdman to ask forty years ago of a person presuming to make Rafinesque the subject of a leading article in a Philadelphia bird magazine.

As to who Rafinesque was, that is a long and curious story of an unique and many-sided naturalist, who spent the greater half of his wandering life in the middle United States. Born near Constantinople in 1783 of Franco-German parents, the subject of our sketch, like many another Old World genius of the period, drifted to Philadelphia about the time he reached early manhood. Landing in the Quaker City, April 18, 1802, and having influential letters to Dr. Rush and other prominent men, he soon became acquainted with the more noted naturalists of the vicinity, as well as those of New York. Superabundant enthusiasm, combined with a very decided mixture of egotism and vanity, which he never attempted to disguise, together with the most radical and remarkably advanced views as to the classification and nomenclature of biology, eventually

brought him into prominence as one of the most daring and erratic of the new lights in American science of that day. This, however, did not come to pass until several years after his first visit to the United States, for, after traveling on foot extensively in Pennsylvania, New Jersey, Delaware, Maryland and New York, chiefly with an eye to the natural beauties and curiosities of the country, he returned to Sicily in the year 1805. He took back with him a large collection of plants, seeds, shells, minerals, etc., which he had picked up in an amateur way, in his American wanderings. He states that his herbarium alone contained ten thousand specimens. In his autobiography¹ he makes no mention of having collected birds previous to this time, but says, "My brother [who accompanied him to America] had become a Sportsman and procured me many Birds. I wanted to undertake the Ornithology of the United States, finding many of them new or unknown, or badly described." It is interesting to know that this was almost precisely the time when Alexander Wilson had resolved to gather materials for the publication of his American Ornithology, and from what we know of Rafinesque's later attempts in this branch of science, it was a fortunate thing that this scheme of his, like many others, was given up.

A perusal of his autobiography shows that he began the study of birds near Marseilles in 1797, when he started writing letters to F. M. Daudin, the French ornithologist, who was his first learned correspondent. Rafinesque states that in 1800, while living near Leghorn with a Mr. Lanthois, "I began to hunt, but the first Bird I shot was a poor *Parus* (titmouse) whose death appeared a cruelty to me, and I have never been able to become an unfeeling hunter. I sent accounts of rare Birds to Daudin. We often visited in Parties, the woods near the city, when Botany was not forgotten." We have here no doubt the chief reason why Rafinesque did so little systematic work in the realm of higher vertebrate animals and eventually devoted the greater part of his biological studies to botany. Indeed, if it were not for the prominent figure which his work

¹ A Life of Travels and Researches in North America and South Europe (etc.). Phila., 1836, 148 pp.

is gradually assuming in the history of other departments of natural science, we would be almost pardoned in keeping silence as to his ornithological work. However, Philadelphia ornithologists, more than any others, should feel an interest in him, for the three earliest titles in his bibliography, strangely enough, not only relate to birds, but were written in Philadelphia, and the first two of these described four new species of birds from Java, which he found in Peale's Philadelphia Museum. These were communicated to his friend Daudin and published by the latter in the Bulletin of the Philomathic Society of Paris in 1802. The first article describes a new woodpecker and a partridge, omitting, however, to give them scientific names.¹ The second article relates to a new swallow and a new warbler, naming them respectively "*Hirudo longipennis*" and "*Sylvia cuneata*."² Rafinesque's descriptions of these, his maiden efforts in this line, were quite full and painstaking. If he had followed these as his models in after life, there would have been another story to tell, but he soon after lapsed into the pernicious brevity and looseness of description, which were not only in large measure the chief causes of his own scientific troubles, but also of those of his successors who have endeavored to identify his discoveries and credit him with the real results.

Returning from this digression, we find him living in Sicily for ten years, actively engaged in commercial and natural history pursuits. Having meanwhile married and been deserted by his wife and two children, and having also published several works relating to the Natural History of Sicily, also a "Nature System" after the plan of the new French School of Science, whose leaders, Lamarck, Lacépède and others, he says, he took for guides, Rafinesque sailed again for America. On the 2d of November, 1815, after a most tempestuous voyage, he was wrecked on the Race Rocks, off Long Island, escaping to land only with his life and "a few scattered funds," his entire bag-

¹ These were supplied later by Rafinesque in his "Précis des découvertes Somiol." Palerme, 1814, p. 2 of the printed covers, viz., *Turnix javanica* and *Dinopium (Picoides) erythronotus*.

² Bulletin des Sci. par la Soc. Philomathique, III, Nos. 67, 68, 1802, pp. 146, 153.

gage, including his collections and manuscripts, having sunk in the Sound. Nothing daunted, he eventually returned by way of New York to Philadelphia in 1818, and thence to Kentucky, joining there his early and most intimate friend, J. D. Clifford.

Up to this time his published books and occasional papers already numbered 269 titles and sub-titles, of which only 7 contained anything relating to birds.¹ Rafinesque's third contribution to literature also relates to birds, being a note by Dr. Mitchill in the New York Medical Repository of October, 1804 (page 208). It was taken from a letter written to him by Rafinesque from Philadelphia, and relates to the "Canvassback Duck and its Food," identifying our Canvass-back as the same as the *Anas ferina* of the Old World, and describing the plant on which it feeds at Havre de Grace as a new species, "*Valisneria americana*." In a work which he published in Sicily in 1810,² chiefly devoted to descriptions and figures of new fish, we find 14 Sicilian birds, described and named as new. No figures of these are given as in the case of fish. They include one hawk, two herons, one sandpiper, two finches, one wagtail and seven warblers. With one or two exceptions his descriptions of these are reasonably full. In 1814 he issued at Palermo a tiny pamphlet of 55 pages,³ in which he names a new curlew, a warbler and a hawk he found in Sicily. The query naturally arises as to how many of these seventeen so-called new birds of Sicily are valid new species, to which the names given by Rafinesque now belong. I am unable to answer this question, and note that Dr. C. W. Richmond, who published a reprint of the majority of Rafinesque's bird-articles in the *Auk* of 1909, does not undertake to identify them. It is not impossible, however, that some of these names may yet hold good. On page 2 of the printed paper covers of the "Precis," Rafinesque gives binomial names of the first two new species described in the Bull. of the

¹ See "Rafinesque; a Sketch, with Bibliography." By T. J. Fitzpatrick. Des Moines, 1911; 239 pp.

² Caratteri Nuovi Generi e Specie Anim. e. Piante d. Sicilia. Palermo, 1810, pp. 5 to 7.

³ Precis des Decouvertes et Travaux Somnologiques, etc. Palermo, 1814, 24mo, 56 pp.

Philomathic Society of 1803, previously referred to, viz.: "*Turnix javanica*" and "*Dinopium (Picoides) erythronotus*." In the same year our indefatigable author published in a work on the fundamental principles of Somiology,¹ some notes relating to the classification of birds, the most important being the substitution of his names "*Anseria*" and "*Apodium*" for *Anser* and *Apus*. In the same year he also contributed an article (No. 193) to the second volume of his scientific journal, the "Specchio,"² on the arrival of the Skylark in Sicily in the autumn.

This is the most lengthy and only popular article on ornithology by him that I have seen. Another work of his, published during his stay in Sicily, and one of the rarest of his many scarce publications, the "Analyse de la Nature,"³ relates extensively to bird classification. In this he gives his own interpretation of the Nature System, dividing birds into 1 class, 1 sub-class, 6 orders, 25 families and about three times that many sub-families. In Dr. Richmond's review of this work he credits Rafinesque with proposing therein 181 new bird genera, of which only 20 are properly introduced to our consideration. Of the remainder, 126 are bare names (*nomina nuda*) and worthless, and 35 are based on unnamed species of the preceding genus, which can be recognized in many cases by allusion. As to how many are tenable, the Doctor does not opine. The work referred to followed his "Somiology" of the previous year, already referred to, in which is outlined his laws of nomenclature and the classification of animals and plants. So far as I can discover, these references are the only ones relating to birds in the publications of Rafinesque up to the time of his leaving Philadelphia for Kentucky in May, 1818. He returned to Philadelphia that fall, and in the summer of 1819 again reached Lexington, and from that time until his final return to Philadelphia in 1826 he industriously explored the country drained

¹ Principes Fondamentaux de Somiologie, etc. Palermo, 1814, 8vo, 52 pp.

² Specchio delle Scienze o Giornale Enciclop. di Sicilia, etc. Palermo, 1814, 2 vols., 8vo.

³ Analyse de la Nature, ou Tableau de l'Univers, etc. Palermo, 1815, 12mo, 224 pp., portrait. See frontispiece.

by the Ohio River and its tributaries, traveling many thousands of miles entirely on foot.

During this period of over six years he published an article relating to birds in the American Monthly Magazine and Critical Review of New York, for 1818, volume 4, describing a new genus and species of bird, "*Rimamphus crinitus*," or Citron Open Bill, "A beautiful little Bird five inches long, shot in Indiana in July, living on insects, darting on them from the Trees," etc. To us moderns this new creation is absolutely not identifiable, and we are rather suspicious that Rafinesque never saw it, but probably drew his inspiration from some fellow naturalist, although he does give, in addition, the length of its tail! The following year (1819) was published in the Journal De Physique of Paris, his prodrome¹ of seventy new genera of animals from the United States; among these are three of birds, in which he redescribes the Citron Open Bill and adds "*Helmitheros*," the generic name by which our Worm-eating Warbler is known; also "*Symphemia*," a name long used by the A. O. U. for the Willet by a mistaken identification of the type species named by Rafinesque in this description. In 1820 Rafinesque showed great activity, and in the numbers of the Western Review and Miscellaneous Magazine² of Lexington he published many contributions, chiefly on botany, ichthyology and geology, supplementing these with an occasional "Faunal Note." I have been unable to consult a copy of this journal, but hope to get word from the Library of Congress as to whether any of these relate to birds.

The same year we find Rafinesque's first published reference to his celebrated contemporary, J. J. Audubon, the ornithologist. This is given in his "Annals of Nature," a pamphlet of sixteen pages published in Lexington, Kentucky, March, 1820. On page 4 of this brochure our author describes four Kentucky and Missouri birds which evidently were based on hearsay accounts, either casually or designedly, given him by Audubon

¹ Jour. de Phys., de Chemie, et d' Hist. Naturelle, etc. Paris, 1819, vol. 88, pp. 417, 429.

² Vols. 2 and 3, 1820.

during his stay at Henderson. The first is a hawk—" *Milvus leucomelas*," which he characterizes as—" White, unspotted, top of head, part of back, wings, tail and bill black, feet yellow. It is found in West Kentucky and Illinois, it feeds on fishes and is therefore called fishing hawk ; size small, tail quite forked." This is, of course, a conglomeration of the colors of the Swallow-tailed Kite, the habits of the Osprey and the size of the Kingfisher, described from memory of some fairy tale of an Ohio boatman, or by Audubon himself, though that naturalist is not made responsible for it. The next species is a brown heron of the Ohio Valley, eighteen inches long, "*Ardea phaioma*." For the next one, "*Charadrius viridis*," Audubon has to stand godfather. I quote the description in full : " Entirely of a light green, unspotted, wings and tail tinged with brown, bill and feet black. It has been seen by Mr. Audubon in Missouri near St. Genievie. It is a solitary and very wild Bird, size of the small common Plover [Killdeer]. Is it a Fulica?" [Coot]. This description exhibits a most surprising credulity as well as ignorance of ornithology in the author, but his mode of introducing to us the last one of his new Kentucky birds, the Scarlet-headed Swallow, caps the climax. It reads : "*Hirundo phenicephala*. Head scarlet, back gray, belly white, bill and feet black. A fine and rare swallow seen only once by Mr. Audubon near Henderson, Kentucky, it must have been a wanderer and is probably a native of Louisiana or Mexico." ¹

This brings us to a consideration of Rafinesque's relations with Audubon, which have been so often discussed by later naturalists as being greatly to the discredit of the famous author of the "Birds of America." I have carefully gone over the matter and in the light of facts, not considered or known to these critics, conclude they have been entirely too hard on Audubon. It is evident that these two men greatly enjoyed a joke, the only difference being that Audubon's jokes were of the more practical kind and Rafinesque always gave way to his inordinate desire to describe anything which struck him as a novelty. Witness how complacently he accepts the joke put

¹ See Cassin *re* this species in the Appx. to his Birds of Calif., Texas, etc. Phila., 1856.

upon him by the letter of introduction which he handed to Audubon when the two first met near Audubon's home at Henderson. This is the letter: "Dear Audubon, I send you an odd fish which may prove to be undescribed (etc.). Believe me to be your friend B."¹ In answer to Audubon's inquiry, after reading this note, as to where the fish was, Rafinesque said delightedly, "I am that odd fish, I presume, Mr. Audubon." Audubon's racy description of his guest, published in his Ornithological Biography, is no doubt the best character-sketch of the pedestrian herbalist and fishing enthusiast that ever was penned and no doubt gives us a true picture of the queer side of a many-sided character, and explains in large measure the reason why so few of Rafinesque's contemporaries ever took him seriously. In all his allusions to Audubon in after life, Rafinesque evidently continued to be his sincere admirer. That they continued to meet and exchange courtesies is evinced by several stray allusions in Rafinesque's publications, also by an unpublished letter, written by Rafinesque not many years before his decease, to Dr. Torrey, which is now preserved at the Academy of Natural Sciences of Philadelphia. Here is part of it: "Phila. 2nd Jan. 1832—Mr. Audubon when here informed me that Plants, Animals and Minerals from N. Amer. sell at regular prices in England (etc), where there are 500 merchants of them and ten thousand buyers for private cabinets &c. Some of our Ohio shells which I was first to make known when brought to England sold for 100 dollars a piece! Some rare ones sell yet for a guinea. Plants sell regularly from \$5 to 10. the 100 &c. He advised me to go to Europe with my collections and manuscripts, hoping I would do as well as he, who has made a fortune by his work on Birds. But I believe I am bound to this continent and will not run again the risk of a third shipwreck. * * * My friend Audubon wanted me next to go with him to Florida where he is gone to spend the winter with 2 assistant collectors (but no Botanist). Mr. Carr Jr. could not go with him neither * * * you did not encourage me sufficiently last

¹ This person "B" was probably David G. Burnett of Cincinnati, O., who in 1824 ridiculed Rafinesque's papers on the Indians, etc., in the Cincinnati Literary Gazette.

summer to send him. I could not leave my business in Philada. to go with Audubon notwithstanding my great desire to explore Florida and the Southern States." Another most conclusive proof that Rafinesque did not resent Audubon's joking treatment of him at Henderson is his unqualified praise of the Ornithological Biography in his review of that work on page 35 of the "Atlantic Journal." It may be remembered that Audubon's account of "A Strange Visitor,"¹ to whom he gave the name of "M. Thouville," first appeared in that work, and it is impossible that Rafinesque could not have instantly recognized himself in the portraiture. Taken all in all we owe to Audubon not merely the transparent imposition upon science of the Scarlet-headed Swallow and those impossible new genera and species of Ohio fishes which were confided to and figured for his enthusiastic and insatiable brother Frenchman, but we can thank him also for having kindly entertained a rival naturalist for many days in his own home, despite the loss of his favorite violin, not to speak of the terror of his family during Rafinesque's "First-night" scrimmage after a new species of bat, as well as for the pen-picture which gives us such a realistic view of Rafinesque's personality in the field. To this we may add that Audubon was one of the very few who did not treat his unfortunate brother-naturalist with disdain, neglect or open enmity. Rafinesque thus refers to his visit to Audubon in his Autobiography. He had descended the Ohio to Louisville and thence "took passage in a keel boat * * * but at Hendersonville in Kentucky I left this boat (too slow) and spent some days with Mr. Audubon, Ornithologist, who showed me his fine collection of colored drawings which he has since published in England."

Returning again to his published writings we find a long period of ornithological inactivity separating Rafinesque's bird-notes, already referred to, published in the "Annals of Nature" in 1820, as well as those on bird hybrids published in the "General Annals of the Physical Sciences of Brussels" (page

¹"The Eccentric Naturalist." Ornithological Biography, Vol. I, pp. 455-460, Edinburgh, 1831.

88) of the same year, from his next contributions on that topic. We find, however, under items 437 and 438 in Fitzpatrick's Bibliography of Rafinesque that he published in the Kentucky "Gazette," Vol. I, Lexington, 1822, an article "On the Birds of Kentucky—a new Swallow," "*Hirundo albifrons*," the Blue Bank-Swallow. Also he published in the succeeding number of that paper an article "On the Wandering Sea-Birds of the Western States." So far I have been unable to consult these references.¹

Not until 1832 can we discover that Rafinesque again ventured into the field then so actively occupied by Audubon, Bonaparte, Townsend and Nuttall. In that year he put forth his Philadelphia "Atlantic Journal and Friend of Knowledge," no doubt in the vain hope that it would outshine or at least rival the straight-laced and ultra-Linnaean journals of Silliman and the Philadelphia Academy, to whose well-censored pages his later productions were anathema.

In part 2 of the Atlantic Journal, on pages 57 to 59, he makes a double-column comparison of the number of native birds of America which have been domesticated by the aborigines, as compared with those of the Old World. Among the former he lists the "American hen" (Guan?), four ducks, several pigeons, an ostrich (Rhea), the Flamingo (quoting ancient Spanish records) fourteen species of parrots, etc. His evident intent was to disprove the English prejudice that aboriginal America had no domestic birds worth mentioning except the Turkey. On page 63 of the same magazine is a full description of an eagle brought from Buenos Ayres, S. A., then captive in the garden of a Mr. Macarran of Phila. It probably was a Bald Eagle with peculiarly colored toes and a band of brown stain across the ends of its tail feathers due to its five years confinement in a cage. Rafinesque named it *Aquila dicronyx* from the

¹Through the kindness of Mr. Putnam, Librarian of Congress, a copy of these articles has been forwarded. They prove of much interest and value and considerably increase our estimation of the author as an ornithologist. Being too lengthy for this paper, they will be published in the second issue of the *Auk* for 1912. In these he describes a new gull and new tern, as well as a new genus of terns.

color of its toes, adding the English name, "Macarran Eagle." This novelty further interests us because of its discoverer's statement that "Mr. Audubon admired this Eagle and wanted to purchase him, but Mr. Macarran would not take less than \$100 for him." Between 1832 and 1836, the date of the publication of his "Life of Travels," Rafinesque does not seem to have given any bird-notes to the world. In that work he makes some allusions to them, as already quoted. Another reference to Audubon is there made on page 90. It relates to the period of Rafinesque's life in Philadelphia in 1831. He says—"I was inclined * * * to carry (to France) my discoveries and collections, hoping to publish my works there. Audubon would never have been able to publish his Birds, if he had not gone to England." In another of these, referring to one of his many tramps in the pine-barrens of New Jersey, he says that in July 1833,—“I passed through the Grouse Plains, without trees, the soil is gravelly, covered with bushes and has no value. I stopped at Cedar Bridge to Botanize and found many plants.” What a familiar sound this has to D. V. O. C. men! An earlier entry in this book refers to Alexander Wilson in an interesting way. Rafinesque in 1804 was preparing to return to Sicily, when, he says, he was almost side-tracked by some one suggesting that he "might be admitted as Botanist in the expedition which Lewis and Clark were then preparing," and continues,—“it appears that Wilson, who wished to join the party as Ornithologist or Hunter, could not obtain the permission.” Rafinesque naively adds,—“The same might have happened with me but I did not apply”! Another reference to his only English confidante and companion, W. Swainson, who collected with him in Sicily and regularly corresponded with him, relates that in 1824 (page 73), “Swainson wanted all the Birds of Kentucky. I could not satisfy all my friends abroad [in sending such collections], not having funds to spend.”

Birds appear to have been quite ignored in Rafinesque's later publications, he being entirely absorbed in botany, philology, ethnology, the manufacture and sale of "Pulmel," his sovereign remedy for consumption, and in the establishment of a new system of savings banks.

With the increase of his publications on all sorts of subjects, many of them relating to hobbies undreamed of by his most versatile fore-bears in biological science, the enemies and pecuniary troubles of Rafinesque increased. He had some friends in Philadelphia, who were willing to overlook his faults and stand by him in his worst extremities, but perhaps no man of his talents suffered more keenly in his closing days the ingratitude and neglect of the world which he had so actively endeavored to benefit and enlighten by his researches. Anyone reading his autobiography and willing to overlook the many egoisms and exaggerations of it, will be impressed with the thought that here was a man striving after truth, a real lover of nature, sincerely endeavoring to impart his interpretation of the cosmos to his fellowmen. At the same time he was sadly handicapped by the necessity of making a living out of his discoveries, his peculiarities depriving him of that patronage and encouragement of wealthy friends which is so essential to the best success in the career of a scientific man addicted to poverty.

In 1842 Rafinesque died in our City of Brotherly Love, uncared for, unloved, alone, and only through the exertions of Dr. James Mease, his executor, was his body rescued from dissection by medical students, and was interred in Ronaldson's Cemetery, 9th and Catherine streets. The exact spot of burial is unmarked and unknown, though it is possible that it may be located. There have been two or three attempts to locate it and erect a monument there to his memory. It yet remains for Philadelphia naturalists to help fulfil in this instance the maxim which Rafinesque applied to himself at the conclusion of his *Life of Travels*: "Time renders justice to all at last."

Haddonfield, N. J., January 15, 1912.

The Frontier of the Carolinian Fauna in the Lower Delaware Valley

BY SPENCER TROTTER

A well-defined rise of land trends along the western side of the lower Delaware Valley in southeastern Pennsylvania. To a casual observer it forms that final ridge of upland country from which one gets an outlook over the flat expanse of the coastal plain. To a geologist it marks the seaward border of an ancient Appalachian land of worn-down crystalline rocks, along the foot of which the Delaware River or some older body of water has spread its flood-plain deposits of gravel, sand, and clay at a comparatively recent period. Where the rivers, flowing down from the Appalachian plateaus, break across this line of demarcation between the older rocks and the recent alluvium, their courses are beset with a series of rapids just before they pass into the deep slow-moving currents of their lower reaches—a feature so characteristic of these streams that it is recognized by geologists as the “fall-line.” This fall-line extends for a long distance and marks a very definite and rather abrupt change in the flow of the Delaware and its lower affluents and of the Susquehanna and other Chesapeake rivers. It possesses interest for the historian and the student of political geography from the fact that its lower edge determines the upper limit of navigable waters, at least in the Delaware and the head of Chesapeake Bay, while its “falls” have long been a more or less considerable source of power. These two features have played an important part in the location of a group of cities, extending from New York through Trenton, Philadelphia, Wilmington, Baltimore, Washington, Richmond, Raleigh, Columbia, and Augusta to Macon, affording water-power for the earlier industrial development of the region and, in the case of the

more northern cities, a ship-way to the sea. In southeastern Pennsylvania this "upland terrace" is marked on survey maps by the 200-foot contour. Fox Chase, the escarpment at Wayne Junction, George's Hill in Fairmount Park, Swarthmore College and the Chester Reservoir are some of the well-known points along this overlook. The Baltimore "Pike" follows along the brow of this terrace from Clifton Heights to Swarthmore.

Now this same fall-line has, to the student of animal and plant distribution, another and an exceedingly interesting significance in that it marks, or has long been supposed to mark, in its northern portion, a boundary line between two faunal areas—the Carolinian and the Alleghanian. Two important lines of thought present themselves in considering this faunal frontier. What relation does the distribution of living beings, thus limited in their northward spread, bear to the geological history of the land area in question, and, secondly, does this topographical feature in reality possess the qualities of a barrier?

From all the evidence that exists in its topography and in the nature of its deposits there is little doubt that the present coastal plain was, in comparatively recent times, a submerged landward strip of the continental shelf, the greater portion of which still lies beneath the marginal waters of the Atlantic, stretching eastward for some two hundred and fifty miles from the Upland terrace (fall-line) to the 100-fathom line, where it slopes abruptly down into the deep basin of the ocean. The whole width of this shelf is quite uniform from north to south, but in the northern portion the submerged area is far in excess of the exposed part that now forms a narrow coastal plain. The deposits of this strip of land are of the Tertiary and Quaternary Age, and the uplift probably took place slowly during the late Pliocene and the early Quaternary.

The history of the Carolinian fauna appears to be intimately related to this coastal-plain formation. As the area became an exposed land-surface a gradual spread of forest-growth took place wherever soil-conditions were favorable, the several dominant types of plant-associations occupying districts best suited to their peculiar physiological needs. The more or less uniform

character of this flat lowland, broadening toward the south and extending around the foot of the southern Appalachian Plateau into the bottom lands of the Mississippi and Ohio drainage, induced the spread of a more or less similar type of vegetation throughout its whole extent. In the narrow northern Atlantic portion of this coastal-plain lowland the tree-growth is strikingly like that which prevails farther to the south and in the interior. It is predominantly a hardwood growth of broad-leaved deciduous forms of great variety. This forest, which finds its best expression in the interior lowlands, is intimately related to humid conditions and to soils of alluvial character. Such species as the Sweet Gum (*Liquidambar*), the Swamp Bay (*Magnolia virginiana*), the Pepperbush (*Olethra*), and certain oaks, besides several other forms, are highly characteristic. These broad-leaved trees find the conditions of their growth in meadow soils of a deep loamy character, while in the extensive sandy tracts throughout the coastal-plain area pines are the prevailing woodland, forming the familiar "pine barrens."

Faunal distribution is very closely associated with the spread of certain types of vegetation, and it seems highly probable that the presence of the Carolinian fauna in the lower Delaware Valley is thus an integral part of the coastal-plain forest. As this forest, finding suitable soil conditions, gradually came to occupy the slowly uplifting margin of the continental shelf, its animal life likewise spread with it.

Birds, from their comparatively high organization and their great freedom of movement, are exceptionally sensitive elements in any faunal group and are thus an indication of changes within a given region. Certain species are clearly related to certain habitats and a particular habitat is fundamentally dependent on vegetation which in turn is conditioned by the character of the soil, climate, of course, determining the broader phases of range. It is a well-known fact, as Mr. Witmer Stone observes in a recent letter to the writer, that "certain birds like the Prairie Warbler seem to be typical of the sandy coastal plain and occur *only* in it, just as with most of the coastal plain plants. The Gnatcatcher and Mockingbird are perhaps other species of similar distribution. Other Carolinian species like

Worm-eating, Blue-winged and Kentucky Warblers are very rare in the New Jersey coastal plain but plentiful in the rich wooded valleys of Pennsylvania. We have exactly similar cases in plants, very rare or absent in New Jersey (close to the Delaware if present) and common in the Susquehanna and other valleys in Pennsylvania. These distributions are probably by character of country."

Now by "character of country" I take it that Mr. Stone refers to just this condition of soil and vegetation influences that we have been discussing. Referring to the second query advanced in this paper, that of the efficacy of the fall-line as a faunal barrier, I must again quote Mr. Stone who has shown in a recent work,¹ the gist of which he gave me in a letter, that the fall-line in New Jersey and Pennsylvania forms a very sharp line of demarcation in plant life, the coastal-plain flora extending right up to its base, often crossing the Delaware River as at Tinicum and in eastern Bucks County. Such trees as the Sweet Gum (*Liquidambar*) and the Willow Oak (*Quercus phellos*), typical of the coastal plain, apparently never cross the "fall-line" in Pennsylvania. Mr. Stone finds a certain element of the upland flora crossing the fall-line into western New Jersey, especially along the Delaware, apparently taking possession of the richer soil, but the coastal-plain elements occurring west of the fall-line are found only in isolated bogs or in local, dry sandy areas. He is of the opinion that these are remnants of an earlier flora, similar to the present coastal-plain flora, which at one time covered the region above the fall-line and has been superseded by the present, more advanced flora, elements of which have come both from the North and the South, no doubt coincident with climatic changes, forcing life toward and away from the north polar region.

If the Carolinian and Alleghanian (and other) life zones be but relatively temporary conditions of a gradual shifting of faunas, it would seem that the differences in present soil-conditions on the two sides of the fall-line have made it a sharply defined line in the case of plants, especially in Pennsylvania

¹Flora of Southern New Jersey. Annual Report N. J. State Museum for 1910, Trenton, 1912.

and New Jersey, where the slope is steeper and the conditions more contrasted than in the south. In the case of free-moving animals, notably birds, many Carolinian forms have easily crossed it and are continually pushing further and further to the north, where deforestation and resulting climatic changes makes this possible.¹ Another interesting fact is that of the Rose-breasted Grosbeak, an Alleghanian species, breeding at Haddonfield² and at Beverly, N. J.,³ which, as Mr. Stone observes, "is exactly parallel to the occurrence of upland plants from Trenton down to Camden in West Jersey."

The significance of the fall-line, as a barrier to the northward extension of certain Carolinian species, seems to involve a difference in soil-formation affecting character of vegetation rather than any question of temperature, for the elevation of the upland is not more than one hundred feet above the lowland. The soils of the weathered crystalline gneisses of the upland are loose compared with the stiff, compact clays which fringe its foot.

The fact is not that these Carolinian species could not find favorable conditions in the upland section, but that they are part of an ancient biotic condition that has not advanced beyond this line. That there is a tendency to advance on the part of certain birds and trees there is no doubt, for we find an invasion of Carolinian types into such areas as the lower Connecticut Valley, where conditions, probably as a result of the old estuarine soils, offer favorable habitats. The Sweet Gum Tree and the Worm-eating and the Blue-winged Yellow Warblers are instances of this more northward dispersal beyond the ordinarily accepted limits of the fauna. Such species, likewise, invade the upland districts above the fall-line along the numerous streams that empty into the Delaware from the west. A fact also of some note is the abundance of winter bird-life on the

¹See a paper by the writer on "The Geological and Geographical Relations of the Land Bird Fauna of Northeastern America." *The Auk*, Vol. xxvi, No. 3, July, 1909.

²Abst. Proc. D. V. O. C., iii, p. 10 (Moore).

³*Auk*, 1897, p. 323 (Reed).

coastal plain as compared with the uplands, probably due to the presence of considerable areas of woodland and marshland which offer greater facilities for obtaining food.

From what evidence has been gathered it appears that such typically Carolinian birds as the Blue-Winged, Worm-Eating, and Kentucky Warblers, the Acadian Flycatcher, the Carolina Wren, Tufted Titmouse and Carolina Chickadee, the Cardinal, the Chat and the Turkey Buzzard, all of which represent the more northerly element of what might properly be termed a *Coastal-Plain Fauna*, are in reality much more abundant in the coastal-plain tracts of southeastern Pennsylvania than in the upland districts; that the history of the region indicates a geologically recent invasion of a certain forest-type with its associate fauna along the coastal-plain border, and that this border lies against an ancient slope of crystalline rock-formation known as the fall-line or upland terrace which separates two very distinct topographic areas, a Piedmont land of great antiquity and a recently elevated strip of coastal sea-bottom. That a fauna does not represent a fixed state of things is evident from the numerous instances of the invasion of these types northward into localities that have become suitable as habitats. That temperature does not exert a controlling influence in this instance I think must be admitted. It is a question of difference of soil and of vegetation as conditioned by soil, and soils are a part of those ultimate geological processes, the influences of which are for ever working out the story of a long inheritance.

The Center Furnace Swamp

BY RICHARD C. HARLOW

FAR up on the Nittany Plateau, shut off from the exterior world by rugged ranges of hills, lies a swamp picturesque in situation but ordinary in appearance, just a common, mud swamp, yet one whose features are indelibly impressed upon my memory. On all sides stretch the fertile farms of the valley extending up and far away, until they are gradually absorbed by the towering hills. To the east runs the Nittany Range mile after mile, southward the Tusseys hoard many an ornithological treasure—the remnants of its primeval forest still concealing the Wild Turkey, Pileated Woodpecker and Raven—against the western horizon rear the barren wastes of Bald Eagle Range, while just behind it sweeps the main ridge of the Alleghanies. Yet of all this region of romantic beauty, of towering hills and fertile valleys, I do not intend to write, but of just a plain, ordinary, mud swamp.

Lying about two miles east of State College the Center Furnace Swamp covers an area of perhaps five acres. Sticking up here and there are gaunt stumps, which bear witness to a time long since, when cedars were the characteristic trees. Now beautiful willows fringe the swamp-stream, that runs at one side, and there a sufficient undergrowth has arisen to attract those birds which like such haunts. The main body of the swamp is covered with dense swamp-grass and dotted with patches of cat-tails. Where the water is deepest, perhaps two feet, Marsh Marigolds and water-cress grow rankly and the center of the swamp is marked by scattering shrubs. Altogether it is an ideal spot for birds and one where they might live unmolested, were it not for frequent invasion by gunners from State College.

Winter bird-life is not so abundant as it might be, but a

chance for novelties is afforded and offers that incentive which spurs the ornithologist on. Here the Short-eared Owl comes in search of field mice, Redpolls and Prairie Horned Larks make erratic visits, while the commoner species, Crow, Sparrow Hawk, Downy Woodpecker, Nuthatch, Kinglet, Song Sparrow, Tree Sparrow, and an occasional Junco, take their turns, either as marauders or innocent haunters of the willows. Meadowlarks were observed and taken here all through the winter of 1909, as well as the Wilson Snipe, which even in ordinary years lingers far into December. The latter finds here a suitable feeding ground and during the spring may be found singly or in bunches of from two to ten. So, too, the Killdeer is nearly resident, being obtainable from late February to December.

With the first vernal breath appear the earliest Bluebirds, Robins, Phoebe, and Flickers, followed by the hordes of Redwings, Cowbirds, Rusty Blackbirds, and all the gradations between the Purple and the Bronzed Grackles, mixed in a motley noisy flock. Along the creek I have shot the Green-winged Teal, while others have secured the Pintail, Mallard, American Merganser, and Pied-billed Grebe. Late April and early May bring the Spotted and the Solitary Sandpiper, the former as a summer resident and the latter as a transient, and with them flocks of the less common Pectoral and the Least Sandpipers. Both species of Yellowlegs have been taken and also the Black-bellied Plover, the rarest of all. The willows along the stream furnish admirable haunts for many of our rarer warblers and here during the migration I have secured the Nashville, Orange-crowned, Blackburnian and Canadian besides all the more common species. The undergrowth below has yielded such birds as the White-throated and the White-crowned Sparrow, as well as the Yellow-bellied Flycatcher.

The summer residents, however, have been the source of most interest to me and have caused more than one memorable trip to the swamp. On one of these I made my first acquaintance with the Virginia and the Sora Rail, as nesting birds. Their presence all through the spring of 1909 made us hopeful that they might breed, and we also had expectations for three American Bitterns and some Swamp Sparrows. The bitterns

were shot but the rails survived. Finding them still present on May 29th, we decided to investigate at an early date. At this time we identified several Short-billed Marsh Wrens, but on subsequent trips were unable to flush them. On June 7th we started for rails' nests with the following results set down in my note book and copied here exactly:

"June 7-1909.—This afternoon Foster White and I started for the Centre Furnace Swamp, where we saw the Rails and Marsh Wrens on May 29. . . . We . . . entered the swamp and, though seeing no marsh wrens, I was agreeably surprised at our luck with the Rails. We saw several of these, both Virginias and Soras, several being flushed from their nests. While looking about I came on a nest of the Virginia Rail containing ten eggs. The nest was a frail structure of marsh-grass, placed under a tussock and cunningly hidden. The bird was flushed about ten yards off.

"About twenty yards off I found a nest of the Sora Rail in the midst of a grass tussock. It also held ten eggs, quite distinct (as was the nest) from those of the Virginia. The nest was cunningly concealed in the center of a grass tussock about three inches over the water, which was about ten inches deep. Several of the eggs laid on top of the others. Not far from here I found an incomplete nest of the Virginia, as well as one of the Sora. Down in the east end of the swamp I flushed a Sora and several yards off found her nest in a tussock, poorly concealed and somewhat in the open. It held one fresh egg (afterward destroyed by Snapping Turtle). Not far from here a Sora rushed off her nest hurriedly, and in a moment I saw her nest neatly concealed in a tussock and holding six hatching eggs and one young, black, little Rail. Nearby were two broken eggshells of birds already hatched. About 50 yards off I flushed a Virginia Rail and soon found her nest, built in a thick clump of marsh-grass and raised eight inches above the water. It held 10 eggs. Some 75 yards off, White came on still another Virginia's nest with 10 eggs. It was built over shallow water about one foot up in the thick marsh-grass. The bird was seen nearby. All the nests were compactly made of dry marsh-grasses and shreds of flags. The Rails usually run off and fly up when you

are still several yards distant. We saw one or two Swamp Sparrows but found no nests, though two of the Song Sparrow were found with four young and five eggs. Several Redwings' nests were found with from one to four eggs, and I collected one set of the latter number. In a dead tree near the swamp we found a Red-headed Woodpecker's nest, 25 feet up, with young."

The total number of nests discovered was four of each species of rail, one of each being incomplete.

The following year, 1910, I found a number of the Soras' nests, collecting two sets of nine and eleven eggs respectively, but discovered none of the Virginia's. David Harrower, however, found several nests, and one of these, a Virginia's, contained an egg which was unmistakably a Sora's. An interesting incident of this trip was the detection of a Snapping Turtle in the act of robbing a rail's nest. I succeeded in killing it, and found that it weighed twenty pounds. The rails were observed again in the swamp in 1911, but their number had decreased, so we did not bother them.

This rather unusual discovery of the two species nesting side by side in the same swamp made it possible for me to compare their nesting habits in the field and to ascertain some distinctive traits of each. The nests of both species are very cunningly concealed and very difficult to see, even when one stands directly above them. Then both run off when one is still some distance away, being very hard to flush. But after noting these two similarities one comes upon distinct differences. The Carolina Rail usually places its nest directly over water in the deeper portions of the swamp, while the Virginia often choose situations where the ground is barely wet. The Carolina builds its nest more compactly, concaves it more deeply, and prefers cattails and shred of flags for lining, whereas the Virginia generally uses dry marsh grass. Eggs of the Carolina are much darker, being covered with brownish and olive blotches, and the shell itself is harder; the Virginia's have a lighter cream-colored background, speckled and spotted with light buff and brown. The Carolina seems to begin incubation with the first egg laid, for the reason that in a set of ten eggs some will be fresh while

others will exhibit various stages of incubation. In a set of eleven they varied from a condition of freshness to that of being nearly full developed. Sets of the Virginia show some variation in development, but not to so marked a degree. Each species seems to be fairly uniform in its nesting habits, so that there is little difficulty in distinguishing them.

May 28th to May 30th is the period when the majority of both species possess fresh eggs, but it may be noticed from the dates given above, that nidification must begin in some instances as early as May 10th, hardly a week after the arrival of the birds. Like the Clapper Rail and the Florida Gallinule, both these species exhibit a tendency to construct sham nests, as a large number are never finished nor laid in. Both species are solicitous when their homes are threatened and they have some reason to be, for they have a few enemies. Crows destroy some sets, large Snapping Turtles in the deeper portions raid others, and probably the Muskrats take their share at times. On the whole, however, their natural enemies are few in number.

As I sit here writing, the memories of these bygone trips come over me, and once again I seem to be travelling muddy areas in search of things ornithological. Poor this swamp is in external appearance, but unusually rich in feathered inhabitants, so that for me it has an attraction and a lure that increases in power as the spring days approach. Soon I shall be drawn irresistibly and once more will be watching the warblers in the willows and listening to the rattling call of the Virginia Rail in the old Center Furnace Swamp.

Recollections of the Passenger Pigeon ¹

BY HERMAN BEHR

In Sullivan and Wyoming counties of Pennsylvania the Loyalsock and Mehoopany Creeks, one flowing to the west and the other to the north branch of the Susquehanna River, make their headwaters almost together. Near the divide was situated my home and here I enjoyed some memorable experiences with the Wild Pigeon, the name by which we then knew it. In all directions from twelve to thirty miles in radius stretched a dense wilderness, thickly grown with hemlock, spruce, birch, maple, and beech trees, the last being the most abundant. Under favorable weather conditions the beech-nut crop was very large and, as it provided the principal food for the Wild Pigeons in this section, its size conditioned their appearance and numbers. The spring following a fine crop of beech-nuts would invariably witness a notable flight of Pigeons and the abundance of their special delicacy would tempt them to stay through the summer months.

It was in April more than in any month of the spring that their arrival could be expected. Then, when the last white of winter had vanished before the warm breath of a southwest wind, the flying host of wings would be seen coming on with the wind at terrific speed. In flocks of a hundred or of thousands they would gradually overspread the sky, flying at different altitudes, but all of them coursing in the same direction. Those, which expected to alight in the vicinity, flew low just above the tree-tops, while others, whose goal was farther on, passed over at high altitude, some four to six hundred feet

¹“This description,” Mr. Behr writes, “is given from memory, and the different years when they (the Passenger Pigeons) appeared were taken from a record which I kept of the different game I shot.” He adds: “I tried to give only what I am sure to be correct.”

above the ground. One particular spring in the forefront of the seventies I remember standing on an elevated spot near our barn whence an extensive view could be had for miles in all directions. Flock after flock followed each other across the sky, each pursuing the same northeasterly course. Not only above my head, but on all sides as far as the eye could reach, I could see nothing but pigeons! The sky was full of them, a perfect maze of beating wings, cut here and there by rifts of blue. It reminded me of an oncoming storm, of black, angry clouds, hurtling up at tremendous velocity and with that rushing sweep of sound, ominous of what is to come. For the combined beat of wings overhead was plainly audible and sounded like the hissing of some immense sky-rocket. I do not remember how long it took for this flight to pass or settle, but I do know that after this the birds were plentiful everywhere.

Not all the Pigeons remained for the summer, but those that did, fed on the beech-nuts while they lasted, and then retired to the wet alder marshes to spend the balance of their stay. On several occasions they nested in our neighborhood in great numbers, but at that time I was too small to observe them myself. My father told me that the last time they homed here, he had counted forty-two nests in one beech tree, and old hunters claimed that the nesting-place (possibly the roost) occupied a space seven miles long by two miles wide. All I personally remember is, that those Pigeons, which stayed with us, remained more or less constantly in the alder marshes, frequenting them for food. Here they pried under the old leaves, searching for worms or insects, scratching and digging with great energy. Throughout these operations I do not recall them using their feet once, but always they pried and scratched and dug with their bills. Towards evening they sought out thick clumps of hemlock or spruce trees, ten to twenty-five feet high, and spent their nights there.

My memory of the Wild Pigeon portrays it as a very peaceable and sociable bird. Its friendly nature was particularly noticeable when one flock passed another. Birds on the ground, despite their interest in feeding operations, would always take

time to hail newcomers with a call, peculiar to the occasion. It was a long-drawn and moderately loud repetition of one note, which sounded like "treet," and this would cause the flying birds to alight in nearby trees, giving in their turn a low call, "tret, tret, tret." To me these seemed to be notes of greeting, while other sounds were indicative of sex. For instance, the female call-note is similar to the "treet" above, but the male response is a low "oorn," which cannot be heard farther than two or three hundred feet. My knowledge of these notes is due to the fact that I learned to imitate them perfectly, in order to call the birds up within good shooting distance. Pigeon shooting was almost a daily occurrence, because these birds formed the bulk of our meat supply. To secure enough for our table my father seldom went farther than fifty feet from the house.

The most interesting observation I have to make on the Wild Pigeon is one fixed in my memory during a stroll along a beech ridge back of our house. Being considered too small to carry a gun, I armed myself with a number of light clubs, which I had learned to throw with considerable force. Searching for Pigeons through the woods, I soon heard them ahead of me in great numbers, and working cautiously forwards I quickly caught sight of them massed on the ground and feeding on beech-nuts. They were moving directly toward me, so I concealed myself and waited. Nearly an acre of ground was thickly covered with the birds, all of them greedily busy in the search for food, turning over the leaves to expose the desired nuts. A portion of the flock was constantly in the air, for as soon as one group of birds found itself in the rear, it flew up and over the others, thus securing the front position. Then the next lot of birds in the rear would fly beyond these, and so on, so that the whole flock seemed to be rolling towards me like an ocean wave. Their progress in my direction was once interrupted by some cause of alarm, I know not what, which startled the whole flock into the air at the same instant. The noise of the frightened wings was tremendous, and the disturbance created on the wood-floor resembled the effects of a small hurricane. Leaves and dead twigs were sucked into their wake and whirled haphazard in all directions. The birds alighted on the trees directly above

where they had been feeding so quietly a moment before, and a confused scramble ensued for standing room. Gradually tense attitudes relaxed, the moment of terror passed, and one by one they dropped to the ground again, the whole phalanx rolling toward me as before. Soon they were within thirty-five feet of me, at which distance I terminated our acquaintance by throwing one of my clubs, an action which scattered the birds but failed to kill.

This flock seemed to represent the climax of abundance of the Wild Pigeons in our neighborhood, for after this they were never so plentiful again. The April of 1882 brought them in small flocks, containing from a half dozen to a hundred and after a month's sojourn with us the majority passed on. The few that remained reared young and stayed the greater part of the summer. During the years 1883, 1884 and 1885, there was a noticeable decrease, in fact they were very scarce, here and there a quiet pair and more often single males, hurtling alone across the once crowded skies. The final passing of the Passenger Pigeons occurred for me in 1886 and was made memorable by their appearance once more in unmistakable numbers. Again the hiss of crowding wings was heard overhead and the chatter of greeting flocks; again that bewildering charge of swiftly-coursing wings was offered to our eyes, but it was destined to be the last pageant, the final review foreshadowing dissolution. They, too, seemed to have premonitions, for before the buds had burst to joyous life, palpitating to the touch of a glorious spring, the fated host had passed, vanishing once and for all over the hills and far away.

The Summer of Fire and Bird Adaptation

BY CORNELIUS WEYGANDT

There were not so many birds to greet us at Buck Hill Falls on our arrival on July 6, 1908, as on our previous summer visits there. Our coming a month later than in 1907 and the changes in the surroundings caused by the growth of the cottage colony were both factors in diminishing the varieties that met us on this visit. Barn Swallows were in the air around the built-over old farm-house in which we were again to spend delightful days, mid-summer days this year, affording decided contrasts to the real spring days of 1907's June and the prevailingly fall days of its September. Barn Swallows were in the air about the clapboard cottage, while in its thickets of lilacs and roses and in its low apple trees and in its little wood of second growth, were many of those birds, mingled of door-yard familiars and quiet wood-haunters, that we got to know so well the previous year. Robin and Wren, Field Sparrow and Chippy, Catbird and Chebec were there, and Ovenbird and Solitary Vireo, but no Indigobird and no Chewink and no Chestnut-sided Warbler and no Summer Yellowbird, and the evening brought no honking Nighthawk or reiterant Whip-poor-will. Four evenings passed before we saw Nighthawks tossing far aloft, and it was one night later still before we heard the first Whip-poor-will, and thereafter, from the house, we never heard more than one at a time; and the Chewink and Chestnut-sided Warbler, common birds in 1905, and still represented in 1907, did not visit us until July 12th; the Indigobird that was a fixture the year before was a rare visitor this summer, and the Summer Yellowbird, still common enough in the valley below, never came to us at all.

As the summer wore on it brought its little adventures with birds. There was the frequent coaxing of a Chipping Sparrow

into the house with crumbs from the table, but without the complete success in taming we won with a ground hackie the previous year; the frequent visits of two Redeyes to the dead limbs on our front-yard mazzard, where they would sit quietly like Robins on the very topmost twig, whence the male would sometimes pronounce his preachment over and over, a proceeding new in my experience of this Vireo; the young Rubythroat we released from a burdock burr that held him fast, to his great fear and great delight, expressed in happy little squeaks as he hummed away; the presence of Great-crested Flycatchers on the upper waters of Broadhead's Creek later than July 15, after which date in previous years we had never seen them; and the Logcock that in late July and early August made the sunset hour more memorable by his passing. It was on the evening of July 26 that we first saw him. Coming out from supper shortly before seven o'clock we noticed a large bird flying heron-like toward us down the Cresco road. He passed us and made his way onward toward a tall broken-topped gum tree that stood out black against the sunset. He "landed" on its side near the top, woodpecker fashion, and bobbed downtrunk backwards for several yards. It was, for sure, a Pileated Woodpecker, unseen here since our first visit in the September of 1903, for I had seen plainly the white about his throat, so near to us he had passed. The sky was mauve and gold and crimson, and the great bird loomed blacker and bigger than he really was, limned sharply against it. He had not dropped along like the smaller woodpeckers, but had kept on more steadily, very like a heron, with only slight risings and fallings. After a rest on the gum tree of some three minutes he flung himself into the air and dove down into the Buck Hill Gorge, making, I supposed, for the great hemlocks there. After this we watched for him of evenings, and several times caught sight of him on his way northward until August 3d, when we saw him for the last time. Where he had spent the day and why he was crow-like so regular in his sunset flight for this week I could not conjecture.

More interesting to me than any new birds discovered could have been was my witnessing of how quickly the birds of the

barrens adapted themselves to their haunts after these had been swept by wood-fires. In fact I saw more kinds of birds and greater numbers of them on the barrens Tobyhanna-way on August 5th and August 6th than I had seen earlier in August on unburned East Mountain, where I came on only Field Sparrows and Chewinks, and more than I had seen on the neighboring Wismer Mountain on July 8, when in a long stay on its top there came about me only Barn Swallows, whose homes were, at nearest, about the barns four hundred feet below and over a mile away, and the Chewinks and Maryland Yellow-throats of the scrub woods about me. It was hardly late enough, when I saw all these birds on the burnt barrens, for them to have gathered there after breeding in the creek valleys below, and, moreover, some of them were accompanied by young. That I saw more, of course, was partly because, with so many leaves burnt off the brush, I had a much better view of my surroundings than on the huckleberried East Mountain and the thicketed Wismer.

It was on the third day of the woods-fires on Big Spring Mountain and Turkey Knob, three miles to the westward of Buckhill Falls, that I went up to see the burnt-over district. All day long on August 4 the fine ash of burnt leaves fell on us at Buck Hill, the wind driving the fires nearer and nearer and bringing out the fire-fighters to prevent the threatening of the community. The fires had been started, presumably by berry pickers, on Pleasant Ridge and had burned their way northward across Turkey Knob to Big Spring, on whose northern slope they were arrested, in some places by the fire-fighters, but in more by masses of rock too bare to support any vegetation. In one place the fires had burned all the way to the Buck Hill stream, the very base of Wild Cat Hollow, a distance of four miles, perhaps, from their place of origin. At its widest the main fire was some two miles broad, unless you counted the places where changing winds had driven it in narrow belts a half mile further toward Buck Hill, its nearest approach to which was the Bockmeyer farm, some two miles distant.

It was about a half mile north of this, on the berry-road up Big Spring, that I came into the burnt-over barrens. Here, where trees twenty to thirty feet high lifted themselves at irreg-

ular intervals above tall scrub, the fire had run along the ground, but seldom eating its way up the trunks. All the leaves on the scrub, here largely oak and chestnut and sassafras and fire cherry, were scorched brown by the heat of the fire in the fallen leaves and light mould below. A number of old trees, some, perhaps, of the original forest cut for tan-bark years ago, were revealed by the burning. These were still smoking, the long drought having made them, rotten from long lying as many of them were, fit fuel for the fire where it had once gained a good headway. Among these fallen trees pine stumps burned with a clear flame, eating holes down into the ground along their roots sometimes to the depth of two feet.

There was no great heat as I walked through the smoking brush, except where I passed such a glowing pine stump near the road, which, fortunately, was seldom burnt over, its many rocks and its wiry and still green grasses having in most places resisted the flames. It was none the less surprising to me, however, though I had come upon little oases of greenery in the charred woods, to hear as I followed the road deeper into the desolation, a good deal of bird-song. It was a gray morning with presage of rain, such a morning as often, even as late as early August, wakes the spring again in the birds, calls back their April instincts, but still I had not expected bird-song now on these barrens, which had known but one rain in six weeks and that but a six hours' rain, and after a fire had just passed through. I had walked but within the burned belt, however, when I heard a Chewink, who from the top of a ten-foot dead stick, sang as vigorously as if he were just mated, though around him arose the smoke of a hundred lingering little fires. More remarkable still was the fact that now, when I was well toward the mid-most of the path of the fire, the singing of Chewinks came to me from all directions. About every hundred yards along the road I would pass a Chewink sending out bravely his little tinkling song over the burnt brush and smouldering pine stumps. Just beyond my first Chewink I had come upon a Field Sparrow singing, and now all along the two miles of burnt road on the mountaintop other of his kind were about, feeding young, some of them, with what I hardly

know, for all surrounding, except the road I followed, and even it, in places, was burnt over. Fewer of the Field Sparrows sang than of the Chewinks, but it was not their young that accounted for their less frequent singing, for the Chewinks, too, were busy with fledglings. Some of the young Chewinks were hopping about on the burnt-through leaf carpet of the barrens, their reds and browns, and the like-colored plumage of their mothers, according well with the scorched leafage, as did the black backs of the males with the charred mould.

Many Robins were flying over, and twice a pair of Doves, whose dusting holes were conspicuous in the dry road I was following, flew over as only they can fly. A nesting Robin screamed from an oak untouched by the fire. At the same time a Flicker scolded from a dead stub near by. Chickadees lisped from the burnt brush, two Yellow-throats sputtered wren-like near me, a Thrasher flew low over the ground, chutting. By these signs I judged I was getting well through the burnt section and so it proved, though the birds had wandered a good way into the smoking woods. I stopped again to listen to their cries and calls, their twittering and song. The Chewinks were still singing; one Field Sparrow was venturing his wistful notes; a Pewee was calling; and, about me, as about me all the way across the burnt-over mountain, the Barn Swallows wheeled, never ceasing their little gratulations so suggestive of home. And all this on the fifth day of August after six weeks of drought and in barrens still smoking from woods-fire.

The burnt barrens drew me back again next day. This time I followed up the Buck Hill Branch all the way to the Pocono Heights House, which lay just on the other side of the fire's sweep. By taking this route I skirted the northern front of the fire's extent. I was curious to see if I should find many birds here, where I thought, perhaps, they would have sought refuge and forage, but I found none at all,—and the day before in burnt woods I had seen many!

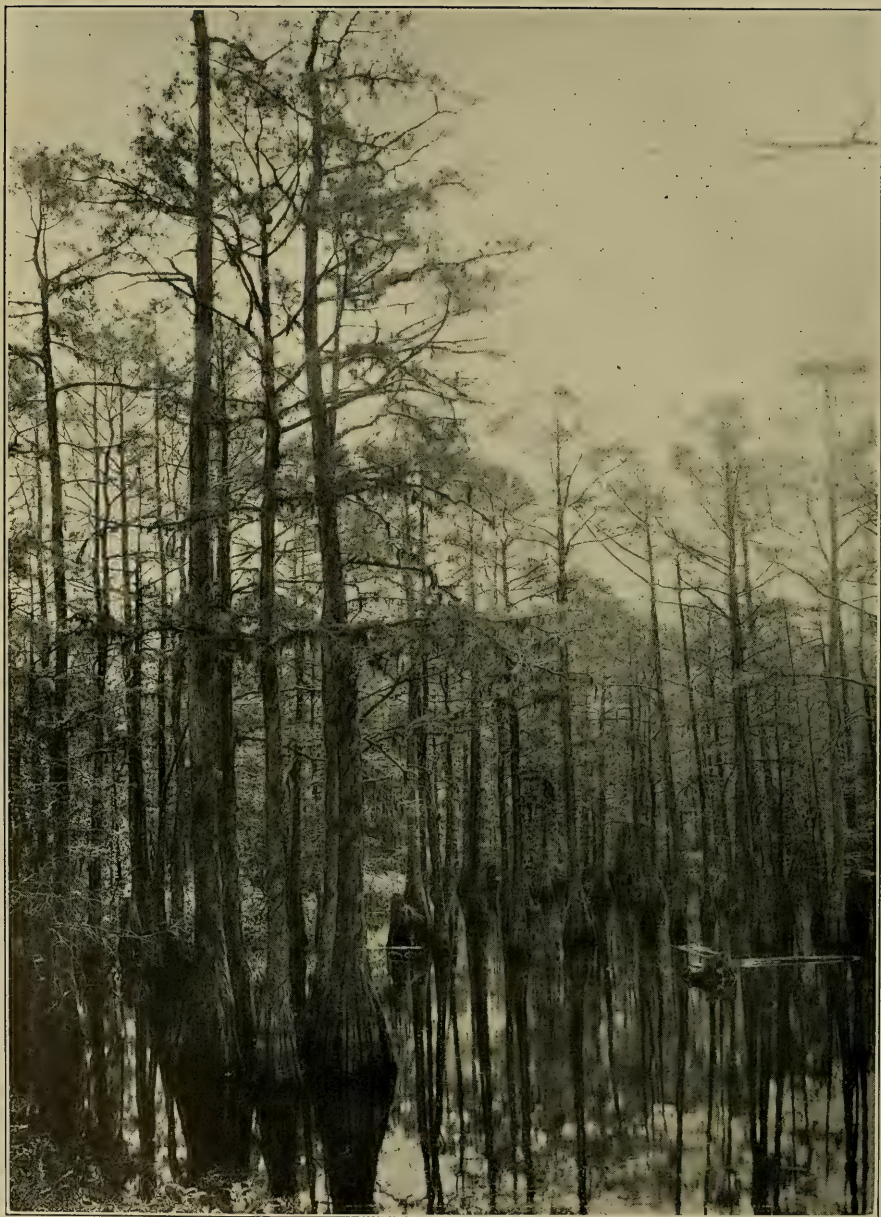
Wildcat Hollow was wild indeed this morning, a morning that had in it much of the menace of an autumn evening. The lowering skies seemed close, as if they were not higher than the tops of the low mountains that ascended so steeply on either

side. There was distant thunder and now and then a few drops of rain. So threatening was it that I was glad to reach the deserted clapboard houses that still stand in the old meadow a quarter of a mile below Pocono Heights. I went into the first of them and waited for the storm to break. For a while the running over the news of the early eighties in the old papers that were pasted over the inner walls of the house contented me, but soon, as the drops fell no faster, I went on up stream, no doubt much to the relief of the old ground-hog whose retreat to his shaft up the fireplace I cut off by my presence. I had not seen a bird all the way up the stream and I saw not one here, not even one of the Pewees that earlier each year nest under the stairs of the old house.

Once past the Pocono Heights house, however, birds were plenty. A stiff breeze was sweeping across these uplands, wet from rain not far away; thunder was rumbling on all sides, there was that expectancy before a storm that is as rousing to birds as to man. A flock of Barn Swallows were gathered on fence and wires opposite the great gray barn, the largest in all this region,—gathered in bunches, and noisy as though about to migrate. In the great fields, now all shorn of their crops, which this great barn is far too large to house, Meadowlarks called from all directions, and some of them clattered down across the road just before me. Kingbirds lifted up their voices loudly from the wires and Bluebirds gurgled gently; Field Sparrows and Vesper Sparrows sang as though it were evening twilight in early summer; and the Swallows dipped and swerved about, as gratulous on the wing as when they regained the wires. Crows cawed from a distance, and Robins threw themselves high in the air from the fence-posts.

I entered the barrens again after traversing about a half mile of open country, and in ten minutes more I was again in the burnt district, this time on the other side from Buck Hill Falls. A Song Sparrow was singing here in a low place now white with ashes, I suppose, of the sphagnum of what was once a swamp. Pewees were about in the burnt brush as on the day before, and Field Sparrows and Chewinks were even more numerous. Once down the top of the ridge, however, on an-

other road than that up Big Spring I had climbed the previous day, there were almost no birds, though here a nest unburnt, some four feet above the burnt ground, told that earlier a Thrasher frequented this part of Turkey Knob. On my way down to Pleasant Ridge I saw only one Chewink in the brush. One Flicker flew over and all the way the Barn Swallows swept about. Once, still further down, when I was well out of the burnt area, the fall note of a Bluebird fell to me from far above, and below the Bockmeyer farm a Jay called. I saw no other birds until I was home again, where the usual dooryard companions were still about. It may have been only a coincidence, but it seemed indeed strange that this day, as the day before, I saw more birds in smoking woods, just fire-swept, than in places seemingly much more favorable to them. It was not the first time that experience upset for me preconceived ornithological ideas, but it was the most decided instance of such upsetting this summer, and the memory of it, with that of the Logcock against sunset skies, has fastened itself upon me as lasting among all the little avian adventures of the summer.



CYPRESSES AT WILLARDS.



VIEWS ON THE POCOMOKE RIVER.

Down the Pocomoke

BY GEORGE SPENCER MORRIS

Willards lies halfway down the peninsula and midway between the Chesapeake and the sea. It was barely sunrise when two of us arrived upon the scene, having passed a strenuous night.

Leaving Philadelphia at eleven p. m. we reached Salisbury at about three a. m., where a two-horse team awaited us. Rain was then descending in torrents, and for the remainder of the night we drove in the darkness through the storm and the mud. At daybreak we jogged into the small and sleepy settlement of Willards, which was still for the most part wrapped in slumber. Here we secured a villainous breakfast, and were joined an hour later by the four other members of our party. They came from the east by the little railroad which here spans the peninsula. They had left Philadelphia at four p. m. on the previous day, had spent the night comfortably at the little town of Berlin, and now, well fortified by sleep and food, they were the better prepared to enter upon the activities of the coming day. Our canoes and other paraphernalia had preceded us. They were quickly loaded upon a two-horse open vehicle. Without regret we turned our backs on Willards and went down the sandy road which led to the Pocomoke, a mile to the eastward.

This is one of the most northerly of the cypress rivers. Perhaps it should hardly be called a cypress river, for its banks and adjoining marshes are heavily timbered with a great variety of bog-growing trees, among which the cypress has a bare majority; nor does it here grow to the great size which it attains on the more southern streams.

The waters of the Pocomoke are restrained in a mill-pond just below Willards. Hundreds of cypresses rise from the placid surface of the pond. The road which we followed led across the dam, and by it stood the mill. Here just below the rumbling wheel we slipped our canoes into the clear brown water and were ready to start on our winding way southward

through the recesses of the great gray swamp. Bits of broken sunshine were beginning to flash through the clouds, patches of blue showed here and there through the tree-tops. Without doubt we were to have a good day for running some twenty-five or thirty miles of the Pocomoke.

The swamp was alive with birds ; the air was full of their songs ; it was evident that the first great rush of the migration was on. The sprightly ringing notes of the Water Thrush came from along the banks ; all through the swamp the Tufted Tits were calling. The blood-red Cardinal flashed among the tangles of green briar and wild grape, and his wonderful whistle came, as always, clear-cut and incisive. From every part of the swamp were flying the varied notes of the great Carolina Wren, most marvelous songster of them all. These four species seem always to be the principal performers in the great spring orchestra that greets one on entering that wooded swamp-land of these southern rivers. And then comes the crowd of humbler musicians that make up the body of the orchestra : the warblers, with voices for the most part thin and reed-like, accented perhaps by the ringing notes of the Yellow-throated Warblers coming from the upper branches, or by the lively repetitions of the Maryland Yellow-throat from somewhere near the ground ; the vireos fluting away in somewhat careless fashion among the treetops ; a touch of pathos thrown in here and there by the tremulous, plaintive whistle of the White-throat from among the thickets. One misses the violins of the thrushes in these early April concerts ; the birds are there, but for the most part silent, yet unquestionably we heard the first faint trilling of the Hermit one morning just at daybreak when in our camp on the lower Pocomoke. To all this concert is added the running accompaniment of the drums of the woodpeckers and tapping of nuthatches. The Flicker, the Downy and Hairy, the Red-bellied and Yellow-bellied all beat their light tattoo, while loud through the forest roars the bass thunder of the great Pileated as he drives that powerful bill against the sounding surface of some hollow limb.

The navigation of the river was surprisingly easy. We had looked for log-obstructions but found very little if any trouble

of this sort. The course of the stream is not difficult to follow. It does not break up and ramify in bewildering fashion like the Blackwater River of southern Virginia, down which we had canoed on previous years. Yet while the banks are clearly defined, they are rarely firm or dry and we went for hours through a region that did not show a possible camp-site. At rare intervals we came to wood-roads leading across the swamp. These spanned the river with low wooden bridges, under which it was difficult and sometimes impossible to force the canoes.

For almost the entire day we had the sense of being completely buried in the great swamp. There were no glimpses out into the open country, no sound of singing darkies in distant fields, no lowing of cattle nor barking of dogs. There were few, if any pines to give relief to the vague, gray waste about us. The buds were swelling but as yet showed no green to speak of. The maples were touched with a tinge of red, and the briary thickets were taking on the first tender tones of Spring, yet the season was backward and even the bird migration appeared to be in its quite early stages. On that day's run we saw no Prothonotary Warblers. The first glimpse of that bit of feathered flame, seen after long absence, always sends through some of us the thrill of new discovery.

Great companies of Rusty Grackles are characteristic of these cypress swamps. They were numerous on the Pocomoke though not quite so abundant as on the more southern rivers. Their song (if such it may be called) becomes a most interesting harmony when hundreds of them tune their little pipes together in one great chorus, reminding one somewhat of the high, sweet peeping of hylas.

The Barred Owl is always an object of interest in these southern swamps. He is as visible as well as an audible presence, for we often see him by day sitting like a grim, gray cat above us as we drift down the stream. When nightfall comes his dog-like cries sound weird through the forest, mingled with the hurried notes of the Whip-poor-will.

Occasionally as we rounded suddenly some bend in the river ducks would spring up before us. These were usually Wood Duck, but we also saw Mallard and the little Hooded Merganser.

Sometimes a Great Blue Heron would rise before us and go down stream with heavy plodding flight. Add to these a couple of Night Herons, a Green Heron, and a few Spotted Sandpipers and you have the list of water birds seen on the trip. The three last named species were all seen on the lower stretches of the river on or near tidewater.

There were some bits of the river more marsh-like in character than others; by this I mean that there were openings in the wooded swamps with an abundant growth of aquatic plant life, reeds and rushes and slender green grasses waving in the water. Such spots must furnish ideal feeding grounds for ducks in winter.

It was well toward the close of the day when we began to detect unmistakable evidences of tidewater, and we knew that our camp-site was not far distant. The banks of the river became firmer and more defined; pines now formed the background against which rose the trunks of cypress and gum. The tide seemed to be at half ebb; the line of high water could be seen distinctly along the banks.

Some members of our party had taken this trip before and had given us a glowing account of the charms of a camp-site previously selected in a grove of noble pines. At length we reached the spot, but alas, the woodman's axe had felled the grove, and so far as the pines were concerned, had wrought havoc for a considerable distance on either hand. Still it was not a bad camp-site. Many trees were still standing and the untouched forest was close at hand. Evening was upon us, so up went the tent; the fire soon gleamed bright and warm in the chill twilight and savory odors from frying pan and boiling pot soon greeted the hungry party, who had put about thirty miles behind their paddles since morning.

With this spot as a base we now spent several days in exploring the region about us, studying its birds and plants, and seeking a closer acquaintance with its pickerel, perch and bass. Our piscatorial efforts were not crowned with much success, although enough pickerel were caught by our more expert fishermen to vary the monotony of the larder.

About a mile below our camp a smaller stream joined the

Pocomoke. Pushing our canoes up against its swift current we came ere long to an old mill with its dam and the mill-pond above it. A great part of this pond was thickly set with small cypress trees. Its headwaters were lost in dense thickets which even the slender canoes could not penetrate. Here at last we found the Prothonotary Warbler, the most splendid species of his group, and on the shores of this pond we also saw the Hooded Warbler.

Leaving our canoes, two of us one day pushed on back into the pine woods and explored their dark green aisles. Here the Pine Warbler was common as it always is in such localities. Often the monotonous twitter of this species is the only evidence of bird-life in the sandy pine regions of New Jersey, Virginia, or the Carolinas.

It is in these woods that we also find the little Brown-headed Nuthatches. Their cheerful chuckles and chatters and their bright and busy ways give a pleasant accent to the somewhat gloomy forest. We came upon them several times in the pines of the Pocomoke region.

It is interesting to realize that at a point only one hundred miles south of Philadelphia we may thus get on intimate terms with species which in the Delaware Valley are wholly unknown or only met with as very rare stragglers. In this group we may put the Prothonotary, Yellow-throated and Hooded Warblers, the Brown-headed Nuthatch, the Mockingbird, the Blue-gray Gnatcatcher, the Red-bellied and the Pileated Woodpeckers.

Our camp on the Pocomoke, while in a secluded and lonely spot, was yet not far removed from civilization. In the distance we could hear the Killdeers calling from the furrowed fields, and at night the bay of the farmer's dog would mingle with the hooting of the Barred Owl. This proximity to a civilization which we saw little of really increased our list of species, for the meeting of field and woodland is always a good bird-ground. Here we could pick up the different varieties of finches, and here we would startle the Quail, which would whirr back into the dense thickets of the river bottom.

Yes, taking it all in all, it was a good country, and a region where somehow a bit of the real South seems to have slipped very far north.

General Notes

Birds Observed near High Point, New Jersey, July 19-September 10, 1911

A copper bolt marks the highest altitude in New Jersey as 1809 feet, at a point eight miles distant from Sussex, N. J., and four and a half miles from Port Jervis, N. Y. High Point is situated on our property, a half-mile from our house and nearer Lake Marcia, which is located in a region of second-growth. Near it is a large swamp, whose floor is carpeted with ferns and overgrown with rhododendrons, hemlocks, spruces, and a few cedars.

The following birds were noted before the fall migration began: about Lake Marcia the Belted Kingfisher and a sandpiper, probably the Spotted; in the neighboring fields one House Wren, the Vesper and the Grasshopper Sparrows; on the mountain Cedar Waxwings, Goldfinches, and a male Purple Finch; in the vicinity the warblers, Chestnut-sided, Black and White, Canada (one female July 30th), Redstart, and Maryland Yellow-throat, as well as several covies of Grouse and a Green Heron. Near Sussex Bobolinks were observed in June and an American Egret. From our house could be seen Chimney Swifts, the Barn and the Eave Swallows, Nighthawks, Buzzards and Bald Eagles, while Towhees and Blue Jays could always be heard by day and Whip-poor-wills by night.

From August 25th to September 1st the migrant Redstarts, the Black-throated Green and the Pine Warblers were common. Other single migrants were observed: a Red-breasted Nuthatch, August 11th; a Connecticut Warbler, August 31st (killed by a cat); a male Magnolia and a female Blackburnian, September 1st. On the evening of August 29th, during a storm, which had been raging for three days, two warblers were attracted to our house-windows and captured, a male Black-throated Blue and an im-

mature Tennessee. The next night, while the storm was still violent, eight more birds were caught about the house, four Red-eyed Vireos, two Ovenbirds, one Hermit Thrush and a warbler, probably a Pine. These birds were so exhausted they could hardly fly.

JOHN DRYDEN KUSER.

Alexander Lawson

So much interest is shown at present in Alexander Wilson, the naturalist, that some of it naturally gathers about Alexander Lawson, his engraver. In fact, no small degree of the naturalist's great success was due to Mr. Lawson's active and intelligent assistance. The latter was a Scotchman, who came to this country previous to 1800, I believe. Eight children were born to him, of whom five grew to maturity and became artists of note. Of these, two daughters, who lived for many years in West Chester, were known to me in my younger days as most interesting and highly cultivated young ladies.

Miss Malvina Lawson was very fond of her distinguished father and told me many interesting stories about him, one being that he had at one time executed some work for John J. Audubon. His most notable achievement, however, was the lithographing of the bird-pictures for Wilson's Ornithology. This book was very profusely illustrated and the pictures were colored by hand, the coloring being done by Malvina and her sister Catherine. At it they labored constantly for three years and were paid five thousand dollars, an immense sum for two young girls to earn in those days.

In the latter part of her life Malvina with her sister, Mrs. Mary L. Birkhead, lived in West Chester and visited at our house frequently. Some of the pictures which she painted for the children are still treasured in the family. Dying in West Chester about 1880, she left one sister, Mrs. Birkhead, the last living descendant of Alexander Lawson. The latter moved to Philadelphia, where she, too, died a few years later.

ROBERT P. SHARPLESS.

Report of the Spring Migration of 1911

COMPILED BY WITMER STONE

The number of schedules returned to the Club for 1911 was thirty-eight, less than any year since this record was begun. Serious efforts are to be made by the migration committee to materially increase the number of observers for 1912 and the coöperation of all of the present corps is earnestly solicited. We particularly desire more records from within ten or fifteen miles of Philadelphia, notably from Germantown, Chestnut Hill, Media, Overbrook, Olney, Woodbury, Merchantville, etc., and from West Chester, Norristown, Conshohocken, Mt. Holly, etc. Names of capable observers should be sent to Mr. Wm. E. Roberts, Chairman D. V. O. C. Migration Committee, Academy of Natural Sciences, Logan Square, Phila., who will supply blank schedules and answer any queries in regard to the work.

The Club has now preserved one of the most important records of bird migration ever brought together in this country, and every effort should be made, not only to prevent any individual record from lapsing, but to secure additional observers to supplement and continue the work that our older observers have so well begun.

The observers for 1911 were as follows:

New Jersey.

Cape May, H. Walker Hand.
Vineland, Mrs. Alice K. Prince.
Downstown, Wm. W. Fair.
Yardville, Rachel E. Allinson.
Bordentown, Minnie V. Flynn.
Three miles S. E. of Trenton, Richard M. Abbott.
Beverly, J. Fletcher Street.
Rancocas, Frances B. Stokes and Emily Haines.
Moorestown, Anna A. Mickle.
Moorestown, Dr. Samuel Haines and M. Albert Linton.
Haddonfield, S. Earle Riddle.
Haddonfield, Mr. and Mrs. Robert T. Moore.
Camden, Julian K. Potter.

Pennsylvania.

Kennett Square, Charles J. Pennock.
Concordville, Katherine R. and Elizabeth P. Styer.
West Chester, Isaac G. Roberts.
Westtown, George H. Hallett Jr.
Swarthmore, Mary S. Pusey.
Lansdowne, Friends School.
Lansdowne, Louisa M. Jacob.
Lansdowne, John D. Carter.
Lansdowne, Edwin L. Nicholson.
Media, Lydia G. Allen.
Ardmore, Wm. L. Baily.
Haverford, Wm. J. Serrill.
Wayne, Mary K. Baker.
Wayne, Leonard S. Pearson.
Bryn Mawr, Emily H. Thomas.
West Philadelphia, Leonard S. Pearson.
West Philadelphia, Thomas R. Hill.
Oak Lane, Samuel H. Barker.
Holmesburg, Henry W. Fowler.
Frankford, Richard F. Miller.
George School, W. W. Swayne.
Collegeville, Henry Fox.
Doylestown, C. Russell Mason.
Trevorton, Alexander Patman.
Lopez, Otto Behr.

The spring migration of 1911 was characterized by several well-marked waves. Winter practically closed with the snow storm of February 20th, which brought with it flocks of Horned Larks, which were reported during the three following days at various stations. Then came clear weather with a steady rise of temperature, culminating with a maximum of 63° on the 26th, which brought a widespread movement of Grackles, Bluebirds and Robins. Another marked rise in temperature, culminating on March 10, marked the first considerable arrival of Fox Sparrows, Red-winged Blackbirds and Flickers. Another wave, March 26-27, brought Phoebes, Cowbirds, Chipping and Field Sparrows, and a decided and sudden increase in temperature,

April 6 and 7, brought Hermit Thrushes, Ruby-crowned Knights and Vesper Sparrows. April was, however, for the most part cloudy with much rain until the last few days, when a rise in temperature, culminating on May 1st, brought hosts of migrants which had been held back by unfavorable conditions. May migration was concentrated on the 1st, 7th, 10th and 16th, and, as is usual when the movement is congested, many Cape May Warblers and other rarities were observed.

Considering the records in the tables for Philadelphia and vicinity we find that 19 records of first arrivals fell on February 26-28, 20 on March 11-13 and 23 on March 26, the number for other days being from one to four. In April there were 33 recorded, April 7-9, while other days varied from one to seven, until April 23, when the rise in temperature began, and we find 13 first-arrival records for April 23; for April 24, 4; April 25, 6; April 26, 21; April 27, 14; April 28, 15; April 29, 13, and April 30, 44. This shows clearly how the movement was concentrated on a few days.

It has been customary during the last few years to compare the dates of bulk arrival, computed, as explained before,¹ with the average of previous years to show how many days early or late each species may be. By comparing several years in this manner it is interesting to see how birds which usually arrive together are affected in the same way and vary from the average by nearly the same number of days. This may be seen by studying the following table. Notice that the earliest migrants were all notably early (+) in 1906 and 1909 and notably late (-) in 1907, while in other years they came closer to normal, especially in 1908. Notice also the different character of the migration as the spring advanced, i. e. in 1906 the earliest migrants were early, those coming about the end of March were notably late, those at the end of April almost exactly normal and the May migrants all early. In 1907 conditions were exactly reversed, earliest migrants late, March migrants early, April migrants normal (as in 1906) and May migrants all late.

¹ i. e., by dropping the last quarter of the records in the Philadelphia circle and selecting the date on which the species had reached one-half of the remaining stations. The disregarded records are considered as probably not actual dates of arrival.

		Average for ten years. 1906 1907 1908 1909 1910 1911						
Bluebird	Feb. 27.	+	9	-12	-1	+	9	+3 -1
Purple Grackle	" 28.	+	6	-9	+1	+13	+5	+2
Robin	Mar. 1.	+	5	-6	0	+11	+1	+4
Meadowlark	" 7.	+10	-9	-3	+	3	+3	+2
Fox Sparrow.	" 7.	+14	-8	-3	+14	+1	-4	
Phoebe.	Mar. 21.	-13	+4	+7	0	+1	-1	
Cowbird	" 24.	-5	+2	+8	-3	-1	-2	
Vesper Sparrow. . . .	" 30.	-9	+6	+7	-3	+5	-3	
Chipping Sparrow . . .	" 31.	-7	+3	+3	-7	+3	-7	
Maryland Yellow-								
throat	April 28.	-1	0	+3	+	2	+1	-2
Grasshopper Sparrow .	" 29.	0	-1	+5	+	4	-8	-7
Yellow Warbler. . . .	" 30.	0	0	+4	-2	0	0	
Catbird.	" 30.	+	1	-1	+5	-1	-3	-2
Ovenbird	" 30.	0	0	+4	-1	0	-2	
Wood Thrush	" 30.	+	1	-1	+4	-1	-4	0
Redstart	May. 4.	+	3	-4	+3	0	-3	
Black-throated Bl. Wbl.	" 4.	+	1	-1	+2	0	-5	-2
Parula Warbler	" 4.	+	1	-4	+2	0	-3	+1
Crested Flycatcher . .	" 4.	+	2	-4	+5	-2	-1	+1
Kingbird	" 5.	+	5	0	+3	-1	-5	-2
Baltimore Oriole . . .	" 5.	+	2	-5	+4	-1	-3	-2
Scarlet Tanager	" 6.	+	3	-4	+4	-1	-6	-4
Blue-winged Wbl. . . .	" 6.	+	3	-5	+4	0	0	-5
Chestnut-sided Wbl. . .	" 7.	+	3	-3	+4	0	-7	0
Red-eyed Vireo	" 8.	+	4	-3	0	+	1	-4 -3
Chat	" 8.	+	3	-2	-1	-1	-5	-3
Rose-breasted Grosbeak.	" 8.	+	4	-3	0	0	-1	-3
Indigobird	" 8.	+	3	-2	-3	0	-4	-4
Magnolia Warbler. . . .	" 8.	+	5	-3	-2	+	1	-3 +1
Bobolink	" 9.	+	6	-2	+1	0	-6	-4
Olive-backed Thrush . .	" 9.	+	3	-2	-2	-1	-5	+3
Hummingbird	" 10.	-2	-2	-3	+	1	-3	-3
Wood Pewee.	" 11.	+	5	-3	-2	-1	-8	-1
Yellow-billed Cuckoo . .	" 11.	+	5	0	-2	-1	-4	-3
Black-poll Warbler. . .	" 12.	+	5	-5	-2	+	1	-7 +1
Canada Warbler. . . .	" 12.	0	0	-1	+	1	-3	+1

In computing the averages for the ten years it is interesting to see how closely the average of "bulk arrivals" reckoned as explained above, coincide with the average of first arrivals at stations where we have had a number of accurate observers. Considering nine common species which are most likely to be seen as soon as they arrive and which are least likely to be misidentified, we have tabulated the arrivals at ten stations as reported by twenty-two observers for from nine to eleven years, 1901-1911. The detailed tabulation for the Brown Thrasher is as follows:

BROWN THRASHER

1901-1911

<i>Beverly and Rancocas.</i>	<i>Moorestown.</i>	<i>Swarthmore.</i>	<i>Lansdowne.</i>	<i>Media.</i>
—	April 22	April 28	—	—
April 28	" 22	" 22	April 24	—
" 24	" 5	" 20	" 29	April 29
" 17	" 17	" 24	" 11	" 23
" 22	" 22	" 24	" 22	" 14
" 22	May 1	" 27	" 29	" 29
" 26	April 28	" 27	" 26	" 26
" 12	" 14	" 17	" 19	" 19
" 18	" 18	" 15	" 22	" 18
" 18	" 22	" 14	" 19	" 15
" 26	" 28	" 27	" 14	" 24
—	—	—	—	—
April 21	April 20	April 22	April 22	April 22
<i>Ardmore and Haverford.</i>	<i>Westtown.</i>	<i>Kennett Square.</i>	<i>Concord- ville.</i>	<i>George School.</i>
April 26	—	—	—	—
" 24	April 28	April 27	April 25	April 22
May 3	" 19	" 27	" 20	May 3
April 15	" 19	" 25	" 18	April 24
" 14	" 11	" 27	" 11	" 22
" 28	" 25	" 15	" 19	" 16
" 26	" 26	" 26	" 26	" 26
" 10	" —	" 20	" 13	" 19
" 17	" 19	" 28	" 16	" 24
" 21	" 24	" 17	" 19	" —
" 28	" 24	" 19	" 19	" 27
—	—	—	—	—
April 22	April 22	April 23	April 19	April 24

Averaging these results we get as our average for this vicinity, April 22, while the average of computed bulk-arrival dates for ten years is April 23. The average date of arrival at these ten stations for the nine species or birds selected is as follows, while at the bottom is given the resulting average arrival date for this vicinity and the average of the bulk-arrival dates computed for each year.

	Purple Grackle.	Phoebe.	Brown Thrasher.	Chimney Swift.	Blk. and Wht. Warbler.	Maryland Yellow-throat.	Catbird.	Ovenbird.	Wood Thrush.
Beverly and R ¹ .	F. 25	M. 26	A. 21	A. 23	A. 26	A. 26	A. 29	M. 1	M. 2
Moorestown . .	23	26	21	22	22	26	30	1	3
Swarthmore . .	27	17	22	22	27	28	28	A. 29	A. 30
Lansdowne . .	25	19	22	24	25	26	29	29	28
Media	29	17	22	21	27	23	29	30	24
Ardmore and H ²	29	20	22	23	27	30	M. 1	29	30
Westtown. . .	24	18	22	23	27	29	A. 29	29	30
Kennett Square.	23	22	23	21	M. 2	28	30	M. 1	M. 4
Concordville. .	21	16	19	22	A. 30	26	28	A. 28	A. 30
George School .	21	21	24	20	25	29	30	28	M. 1
Average . . .	Feb. 25	Mar. 20	Apr. 22	Apr. 22	Apr. 27	Apr. 27	Apr. 29	Apr. 29	Apr. 30
"Bulk Arrivals" ³	Feb. 28	Mar. 21	Apr. 23	Apr. 22	Apr. 26	Apr. 28	Apr. 30	Apr. 30	Apr. 30

¹ Rancocas.² Haverford.³ Average of "Bulk Arrivals."

The case of the Purple Grackle is undoubtedly influenced by the early stragglers which have wintered not far away, and which often appear before the regular migratory flight and make the average of "first arrival" at many stations earlier than it really should be. In the other species the dates are the same in three

cases and differ by one day in the other five, which shows that by the method of computing "bulk arrival" we are getting remarkably accurate results. If we could only induce observers clustered around some other large city, some distance from Philadelphia, like Boston or Washington, to keep similar records and tabulate them in the same manner, then we should be able to estimate the progress of the migration and the actual speed at which the birds travel. The data heretofore used is not sufficiently free from error to warrant accurate results. One has but to compare the ten-year averages in the last table for any species at ten stations where from two to four careful observers have kept the records, to see at once what variation they present at stations only a few miles apart, while stations like George School and Concordville, forty miles apart, along the line of the Delaware Valley, and twenty-five miles different in latitude, show no constant difference, five species averaging earlier at the more southern station, two at the more northern and two the same.¹

¹ Cf. for discussion of this matter Stone, *Proc. Acad. Nat. Sci.*, 1908, pp. 128-156.

NAME.	Beverly, N. J. E. 13; N. 8.	Rancocas, N. J. E. 16; N. 4.	Moorestown, N. J. N. 1; E. 12.	Haddonfield, N. J. S. 4; E. 7.	Camden, N. J. N. 0; E. 2.	Media, Pa. S. 2; W. 12.	Swarthmore, Pa. S. 3; W. 10.	Lansdowne, Pa. S. 1; W. 6.	Haverford- Ardmore, Pa. N. 4; W. 8.	Bryn Mawr, Pa. N. 4; W. 9.	Wayne, Pa. N. 6; W. 11.	West Philada. N. 0; W. 2.	Holmesburg, Phila. N. 6; E. 7.	Oak Lane, N. 7; E. 2.	Frankford, Phila. N. 5; E. 5.	Bulk Arrival Phila., 1911.
Canada Goose	Apr. 30		May 10	Apr. 30	May 9						Apr. 30		Mar. 10		May 3	Apr. 30
Green Heron		May 18	Apr. 9	May 14	May 1			Apr. 25	Apr. 26		Apr. 30			Apr. 30	May 3	
Night Heron	May 7		Apr. 26	May 9	May 9				Apr. 23		Apr. 30			May 14	Mar. 29	
Spotted Sandpiper	Apr. 26			May 7	May 7			Mar. 26	May 14		May 20				May 2	
Solitary Sandpiper	Mar. 4	Mar. 20	Mar. 21	Feb. 26	Mar. 11			Apr. 25	Mar. 31	Mar. 20	Mar. 5			Res.	Mar. 4	Mar. 5
Killdeer	Mar. 19	Mar. 12	Mar. 26	Mar. 19	Apr. 9	May 7	May 6				Mar. 12				Apr. 1	
Dove				Apr. 10	Apr. 22			Mar. 15	Feb. 26	Mar. 20	Apr. 21				Apr. 14	
Osprey	Res.	Res.	Mar. 26			Apr. 2	June 2	May 19	May 13	May 21	May 24			May 18	May 19	May 14
Turkey Vulture	May 14	May 13	May 12	May 21	May 21			Mar. 15	Feb. 26	Mar. 20	Mar. 5	Apr. 30			Apr. 10	
Yellow-billed Cuckoo								Apr. 9	Feb. 28	Apr. 25	Mar. 26	Apr. 9			May 19	
Black-billed Cuckoo	Apr. 30	Apr. 12	Apr. 9	Mar. 19	Mar. 25	Apr. 2		Apr. 9	Apr. 25	Apr. 7	Apr. 21	Apr. 20		Mar. 3	Apr. 8	Mar. 30
Kingfisher					Res.			Jun. 10	May 14		May 7	May 17			Apr. 13	Apr. 7
Yellow-headed Sapsucker					Res.			Apr. 9	Apr. 25	Apr. 7	May 7	Mar. 13			Mar. 7	Mar. 13
Red-headed Woodpecker	Mar. 19	Mar. 11	Mar. 22	Res.	Res.	Mar. 26	Mar. 22	Mar. 22	Mar. 11	Apr. 23	Mar. 26	Mar. 13	Mar. 12	Res.	Mar. 7	
Flicker	May 1	Apr. 29		Apr. 11		May 7	May 4	May 3	May 3	May 3	May 2	May 2				May 15
Whip-poor-will	May 17				June 5			Apr. 27	May 13	May 15		May 29	May 19			
Nighthawk	Apr. 27	Apr. 27	Apr. 26	Apr. 14	Apr. 30	Apr. 23		Apr. 27	Apr. 27	Apr. 24	Apr. 27	May 7	Apr. 28	Apr. 30	Apr. 21	Apr. 27
Chimney Swift					May 21	May 14	May 27	Jun. 13	May 14	May 11	May 12					May 13
Hummingbird	May 14	May 11	May 13		May 21	May 14			May 14	May 11	May 14		May 18	May 21	May 12	May 7
Kingbird	May 11	May 1	May 6	May 5	May 7	May 14			May 14	May 14	May 14			May 10	May 12	May 7
Grested Flycatcher	May 6	May 6	May 2	Apr. 30	May 1	May 2		May 12	May 10	May 3	May 7	May 7			May 10	May 3
Phoebe	Apr. 9	Apr. 7	Mar. 26	Mar. 26	Mar. 26	Mar. 13	Apr. 29	Mar. 27	Mar. 11	Mar. 16	Mar. 12	Apr. 2	Mar. 12	Apr. 2	Mar. 23	Mar. 22

NAME.	Beverly, N. J.	Ranocas, N. J.	Moorestown, N. J.	Haddonfield, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Lansdowne, Pa.	Haverford and Ardmore, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Holmesburg, Phila.	Oak Lane.	Frankford, Phila.	Bulk Arrival Phila., 1911.
Wood Pewee	May 17	May 11	May 6	May 2	May 6	May 14	May 19	May 16	May 12	May 5	May 12	May 17	. . .	May 7	May 12	May 12
Acadian Flycatcher . . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	May 12	May 6	. . .	. . .	May 7	. . .	May 28	May 12	May 12
Least Flycatcher	May 2	. . .	. . .	. . .	May 4	. . .	. . .	May 16	May 3	. . .	May 7	May 2	. . .	May 28	May 5	May 3
Bobolink . . . . .	. . .	May 14	May 10	May 13	May 14	. . .	. . .	May 16	May 13	. . .	. . .	. . .	. . .	. . .	May 4	May 13
Cowbird	Mar. 19	. . .	. . .	. . .	. . .	Apr. 11	. . .	Mar. 26	Mar. 26	. . .	Mar. 26	Apr. 9	Apr. 3	. . .	Mar. 20	Mar. 26
Red-winged Blackbird . .	Feb. 26	. . .	Mar. 10	Feb. 26	Feb. 19	Mar. 21	Mar. 20	Mar. 28	Mar. 12	Mar. 28	Mar. 26	Apr. 9	Mar. 26	Mar. 22	Mar. 27	Mar. 10
Meadowlark	Res. Mar. 12	May 2	Res. May 5	Res. May 14	May 14	. . .	. . .	Res. May 6	May 11	Mar. 23	Mar. 5	Mar. 12	Mar. 1	Res. Feb. 23	Mar. 5	Mar. 5
Orchard Oriole	May 2	May 3	May 11	May 14	May 5	May 4	May 7	May 6	May 10	. . .	May 4	May 15	May 16	May 11	May 7	May 7
Baltimore Oriole	May 2	May 3	May 11	May 14	May 5	May 4	May 7	May 6	May 10	. . .	May 4	May 15	May 16	May 11	May 9	May 7
Rusty Blackbird	May 2	May 3	May 11	May 14	May 5	May 4	May 7	May 6	May 10	. . .	May 4	May 15	May 16	May 11	May 9	May 7
Purple Grackle	Jan. 19	Feb. 2	Feb. 5	Feb. 19	Mar. 5	Feb. 28	. . .	Feb. 26	Feb. 26	Feb. 20	Feb. 26	Feb. 27	Feb. 26	Feb. 26	Feb. 23	Feb. 26
Vesper Sparrow	Apr. 9	Apr. 3	Apr. 9	Apr. 18	Feb. 22	Apr. 26	. . .	Feb. 26	Feb. 26	. . .	Apr. 2	Mar. 26	. . .	. . .	Mar. 13	Apr. 2
Savannah Sparrow . . .	Apr. 30	. . .	. . .	Apr. 23	Apr. 12	. . .	. . .	. . .	May 14	. . .	May 26	. . .	. . .	. . .	Mar. 18	. . .
Grasshopper Sparrow . .	. . .	May 6	May 6	. . .	. . .	. . .	. . .	. . .	May 6	. . .	Apr. 30	May 3	. . .	May 7	May 17	May 6
Chipping Sparrow	Apr. 8	Apr. 4	Mar. 26	Mar. 19	Apr. 9	Apr. 10	. . .	Mar. 18	Apr. 9	Mar. 28	Apr. 5	Apr. 7	Apr. 7	Apr. 15	Mar. 29	Apr. 7
Field Sparrow	Mar. 18	Mar. 26	Apr. 2	Mar. 19	Jan. 1	Apr. 3	Apr. 23	Mar. 17	Mar. 11	. . .	Mar. 5	Mar. 26	. . .	Apr. 4	Mar. 13	Mar. 18
Swamp Sparrow	Apr. 21	May 10	Apr. 30	Apr. 17	Jan. 30	. . .	. . .	Mar. 17	Apr. 11	. . .	Mar. 26	. . .	. . .	. . .	Apr. 21	. . .
Fox Sparrow	Mar. 19	. . .	Mar. 26	Mar. 25	Jan. 1	Mar. 11	. . .	Feb. 26	Mar. 11	Mar. 28	Mar. 5	Mar. 13	. . .	Mar. 5	Mar. 8	Mar. 11
Chewink	Apr. 16	Apr. 25	Apr. 30	Apr. 17	Apr. 22	Apr. 25	May 2	Apr. 11	Apr. 23	May 3	Apr. 18	Apr. 11	Apr. 9	Apr. 28	Apr. 10	Apr. 18
Rose-breasted Grosbeak .	May 12	May 11	May 11	. . .	May 6	. . .	. . .	May 14	May 15	. . .	May 14	May 15	. . .	. . .	May 3	May 11
Indigobird	May 19	May 13	May 12	May 6	May 20	May 11	. . .	May 17	May 12	. . .	May 11	May 15	May 18	May 11	May 12	May 12
Scarlet Tanager	May 13	May 11	May 11	May 7	May 4	May 7	May 6	May 3	May 5	May 11	May 11	May 15	. . .	May 21	May 12	May 10
Purple Martin	May 11	. . .	Apr. 5	Apr. 11	June 3	. . .	. . .	. . .	May 14	. . .	Apr. 21	. . .	Apr. 7	. . .	Apr. 21	Apr. 22

NAME.	Beverly, N. J.	Ranocas, N. J.	Moorestown, N. J.	Haddonfield, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Lansdowne, Pa.	Haverford and Ardmore, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philadelphia.	Holmesburg, Phila.	Oak Lane.	Frankford, Phila.	Bulk Arrival Phila., 1911.
Cliff Swallow	May 11	Apr. 26	Apr. 26	Apr. 26	May 7	May 14	May 14	Apr. 7	Apr. 8	Apr. 22	Apr. 18	May 15	Apr. 12	Apr. 23	Apr. 12	Apr. 23
Barn Swallow	Apr. 22	May 3	Apr. 26	Apr. 11	Apr. 2	May 14	May 14	Apr. 7	Apr. 8	Apr. 22	Apr. 18	Apr. 23	Apr. 12	Apr. 23	Apr. 12	Apr. 23
Tree Swallow	Apr. 22	May 3	Apr. 26	Apr. 11	Apr. 2	May 14	May 14	Apr. 7	Apr. 8	Apr. 22	Apr. 18	Apr. 23	Apr. 12	Apr. 23	Apr. 12	Apr. 23
Bank Swallow	Apr. 27	May 4	Apr. 26	Apr. 11	Apr. 29	Apr. 21	Apr. 21	Apr. 24	Apr. 29	Apr. 29	Apr. 30	Apr. 30	Apr. 26	Apr. 26	Apr. 26	Apr. 26
Rough-winged Swallow	Mar. 26	May 4	Apr. 26	Apr. 11	May 30	Apr. 21	Apr. 21	Apr. 24	Apr. 29	Apr. 29	Apr. 30	Apr. 30	Apr. 11	Apr. 11	Apr. 11	Apr. 11
Cedarbird	May 4	May 11	May 5	May 14	May 14	May 13	May 13	May 12	May 11	May 12	May 11	May 15	May 11	May 11	May 11	May 11
Red-eyed Vireo	May 4	May 13	Apr. 29	May 21	May 14	May 13	May 13	May 14	May 14	May 12	May 13	May 15	May 11	May 11	May 11	May 11
Warbling Vireo	May 14	May 7	Apr. 29	May 6	May 30	May 30	May 30	May 8	May 1	May 1	May 13	May 17	May 16	May 16	May 16	May 13
Yellow-throated Vireo	May 14	May 7	Apr. 29	May 6	May 30	May 30	May 30	May 8	May 1	May 1	May 13	May 17	May 16	May 16	May 16	May 13
Solitary Vireo	Apr. 30	May 4	May 5	Apr. 30	May 1	May 12	May 12	May 2	Apr. 27	May 2	Apr. 23	May 7	May 7	May 7	May 7	May 7
White-eyed Vireo	Apr. 30	May 4	May 5	Apr. 30	May 1	May 12	May 12	May 2	Apr. 27	May 2	Apr. 23	May 7	May 7	May 7	May 7	May 7
Black and White Warbler	Apr. 28	Apr. 29	Apr. 26	Apr. 27	Apr. 30	Apr. 27	May 2	May 1	Apr. 26	May 1	Apr. 30	May 7	Apr. 30	May 7	May 5	Apr. 30
Worm-eating Warbler	May 9	May 9	May 11	May 6	May 11	May 11	May 11	May 1	May 7	May 1	May 7	May 15	May 16	May 11	May 5	May 11
Blue-winged Warbler	May 11	May 11	May 11	May 17	May 17	May 11	May 11	May 1	May 14	May 1	May 7	May 15	May 16	May 11	May 5	May 11
Parula Warbler	Apr. 30	May 2	Apr. 30	May 3	Apr. 30	May 11	May 11	May 1	May 7	May 1	May 7	May 15	May 16	May 11	May 5	May 11
Yellow Warbler	Apr. 27	Apr. 28	Apr. 28	Apr. 30	Apr. 28	May 14	May 14	May 6	May 12	May 1	May 7	May 2	May 2	May 14	May 12	May 11
Black-throated Blue Warbler	May 6	May 10	May 5	May 14	May 7	May 7	May 7	May 6	Apr. 28	May 1	May 7	May 2	Apr. 29	May 4	May 4	Apr. 30
Myrtle Warbler	Apr. 27	May 1	Apr. 26	May 14	May 7	May 7	May 7	May 3	May 5	May 1	May 6	May 7	May 6	May 16	May 16	May 6
Magnolia Warbler	May 6	May 11	Apr. 28	May 14	May 7	May 7	May 7	Apr. 14	Apr. 14	May 1	Apr. 30	Apr. 27	Apr. 30	May 7	Apr. 19	Apr. 28
Chestnut-sided Warbler	May 11	May 11	May 11	May 14	May 7	May 7	May 7	May 7	May 7	May 11	May 7	May 7	Apr. 30	May 1	May 1	May 7
Black-poll Warbler	May 6	May 11	May 11	May 7	May 7	May 13	May 13	May 12	May 12	May 8	May 14	May 2	May 18	May 17	May 17	May 7
Blackburnian Warbler	May 6	May 11	May 11	May 7	May 7	May 13	May 13	May 12	May 12	May 8	May 14	May 6	May 18	May 17	May 17	May 7
Black-throated Green Warbler	May 6	May 10	May 6	May 2	May 6	May 1	May 1	May 7	Apr. 27	May 3	May 6	May 7	May 6	May 2	May 2	May 6

NAME.	Beverly, N. J.	Rancocas, N. J.	Moorestown, N. J.	Haddonfield, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Lansdowne, Pa.	Haverford and Ardmore, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Holmesburg, Phila.	Oak Lane.	Frankford, Phila.	Bulk Arrival at Phila., 1911.
Pine Warbler	Apr. 27	Apr. 26	Apr. 30	Apr. 30	Apr. 26	Apr. 26	Apr. 26	Apr. 7	Apr. 16	Apr. 22	Apr. 18	Apr. 28	Apr. 28	Apr. 9	Apr. 8	Apr. 18
Yellow Palm Warbler	Apr. 30	Apr. 26	Apr. 26	Apr. 28	Apr. 22	Apr. 26	Apr. 26	Apr. 7	May 14	May 1	Apr. 30	May 11	May 11	May 9	May 9	May 2
Prairie Warbler	May 6	May 10	Apr. 30	Apr. 27	Apr. 30	May 1	May 2	May 2	May 3	May 1	Apr. 30	May 1	May 1	May 7	May 7	May 7
Orenbird	May 6	May 14	Apr. 30	May 7	May 7	May 7	May 7	May 7	Apr. 26	May 7	May 7	May 6	May 6	May 7	May 7	May 7
Water Thrush	Apr. 30	Apr. 28	Apr. 30	Apr. 30	Apr. 26	May 14	May 14	May 14	May 2	May 3	May 3	May 3	May 3	May 3	May 3	May 3
Kentucky Warbler	Apr. 30	Apr. 28	Apr. 30	Apr. 30	Apr. 26	Apr. 29	May 2	May 2	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3
Maryland Yellow-throat	May 17	May 13	May 14	May 7	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14
Chat	May 17	May 13	May 14	May 7	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14	May 14
Canada Warbler	May 7	May 6	Apr. 30	May 2	Apr. 30	May 7	May 7	May 7	May 7	May 7	May 7	May 7	May 7	May 7	May 7	May 7
Redstart	Apr. 30	May 1	May 5	Apr. 30	Apr. 29	May 2	May 2	May 2	May 3	May 3	May 3	May 3	May 3	May 3	May 3	May 3
Catbird	Apr. 27	Apr. 26	Apr. 23	Apr. 17	Apr. 26	Apr. 24	Apr. 27	Apr. 14	Apr. 28	Apr. 22	Apr. 20	Apr. 17	Apr. 17	Apr. 17	Apr. 17	Apr. 17
Brown Thrasher	Apr. 27	Apr. 24	Apr. 30	Apr. 17	Apr. 26	Apr. 23	Apr. 30	Apr. 28	Apr. 23	Apr. 27	Apr. 30	Apr. 20	Apr. 20	Apr. 30	Apr. 26	Apr. 26
House Wren	May 21	Apr. 23	Apr. 19	Apr. 17	Apr. 8	Apr. 25	Apr. 30	Apr. 24	Apr. 16	Apr. 8	Apr. 18	Apr. 9	Apr. 9	Apr. 7	Apr. 16	Apr. 16
Long-bill'd Marsh Wren	Apr. 30	May 11	May 5	Apr. 30	May 4	Apr. 29	Apr. 30	Apr. 30	Apr. 30	May 3	Apr. 30	May 1	May 1	May 4	Apr. 7	Apr. 30
Ruby-crowned Kinglet	May 7	May 11	May 2	May 6	May 6	May 3	May 3	May 3	May 6	May 3	May 7	May 17	May 17	May 1	Apr. 26	May 3
Wood Thrush	May 7	May 11	May 2	May 6	May 6	May 3	May 3	May 3	May 6	May 3	May 7	May 17	May 17	May 1	Apr. 26	May 3
Wilson's Thrush	May 7	May 11	May 2	May 6	May 6	May 3	May 3	May 3	May 6	May 3	May 7	May 17	May 17	May 1	Apr. 26	May 3
Gray-cheeked Thrush	Apr. 9	Apr. 11	Apr. 9	May 2	Apr. 9	Apr. 23	Apr. 23	Apr. 23	May 3	May 3	May 6	May 4	May 4	Apr. 9	May 17	May 6
Olive-backed Thrush	Feb. 22	Feb. 22	Feb. 28	Feb. 26	Mar. 5	Feb. 27	Feb. 25	Mar. 6	Feb. 16	Apr. 8	Apr. 13	Apr. 13	Apr. 13	Apr. 9	Apr. 6	Apr. 9
Hermit Thrush	Feb. 22	Feb. 22	Feb. 28	Feb. 26	Mar. 5	Feb. 27	Feb. 25	Mar. 6	Feb. 16	Apr. 8	Apr. 13	Apr. 13	Apr. 13	Apr. 9	Apr. 6	Apr. 9
Robin	Feb. 22	Feb. 22	Feb. 28	Feb. 26	Mar. 5	Feb. 27	Feb. 25	Mar. 6	Feb. 16	Apr. 8	Apr. 13	Apr. 13	Apr. 13	Apr. 9	Apr. 6	Apr. 9
Bluebird	Feb. 22	Feb. 22	Feb. 28	Feb. 26	Mar. 5	Feb. 27	Feb. 25	Mar. 6	Feb. 16	Apr. 8	Apr. 13	Apr. 13	Apr. 13	Apr. 9	Apr. 6	Apr. 9

NAMES.	Cape May, N. J. E. 13; S. 72.	Vineland, N. J. E. 7; S. 32.	Downstown, N. J. E. 11; S. 28.	Kennett Square, Pa. W. 30; S. 8.	Concordville, Pa. W. 20; S. 5.
Flicker.....	Mar. 23	Res.	Mar. 29	.....	Mar. 25
Whip-poor-will.....	Apr. 27	Apr. 10	Apr. 24	.....	.....
Nighthawk.....	.....	May 12	.....	.....	.....
Chimney Swift.....	Apr. 27	Apr. 30	Apr. 30	Apr. 26	Apr. 26
Hummingbird.....	Apr. 30	May 11	.....	May 11	.....
Kingbird.....	Apr. 24	May 1	May 6	May 11	Apr. 26
Great-crested Flycatcher....	Apr. 28	May 2	May 4	.....	May 6
Phoebe.....	.....	Apr. 14	.....	Mar. 21	Mar. 26
Bobolink.....	.....	May 28	.....	May 12	May 3
Cowbird.....	Res.	.....	.....	.....	Mar. 1
Red-winged Blackbird.....	Feb. 27	Mar. 6	Mar. 12	Feb. 27	Mar. 1
Baltimore Oriole.....	May 2	May 4	May 12	May 2	May 3
Purple Grackle.....	Feb. 27	Mar. 6	.....	Feb. 25	Feb. 19
Chipping Sparrow.....	Mar. 30	Mar. 28	Apr. 7	Apr. 11	Apr. 7
Chewink.....	Mar. 11	Apr. 23	Apr. 23	Apr. 27	Apr. 29
Indigobird.....	May 5	May 4	.....	.....	May 11
Scarlet Tanager.....	.....	May 11	May 21	May 11	May 2
Purple Martin.....	Apr. 6	Apr. 5	Apr. 27	.....	Apr. 18
Barn Swallow.....	Apr. 27	Apr. 16	May 15	Apr. 17	Apr. 22
Red-eyed Vireo.....	.....	May 4	May 9	May 12	May 11
Black and White Warbler..	Apr. 26	May 1	Apr. 30	.....	May 2
Chestnut-sided Warbler.....	.....	.....	.....	.....	May 2
Ovenbird.....	.....	.....	May 9	May 5	May 1
Maryland Yellow-throat. .	Apr. 27	May 1	Apr. 30	May 2	Apr. 30
Chat.....	May 5	May 2	May 21	.....	May 2
Catbird.....	Apr. 24	May 1	May 4	.....	May 2
Brown Thrasher.....	Apr. 27	Apr. 4	Apr. 24	Apr. 19	Apr. 1
House Wren.....	.....	May 1	Apr. 29	Apr. 28	Apr. 2
Wood Thrush.....	Apr. 30	May 1	May 14	May 5	May 1
Hermit Thrush.....	.....	Apr. 13	.....	Apr. 17	Apr. 2
Robin.....	Res.	Res.	Mar. 12	Feb. 26	Mar.
Bluebird.....	Res.	Res.	Feb. 27	Feb. 26	Feb. 1



NAMES.

NAMES.	Cape May, N. J. E. 13; S. 72.	Vineyard, N. J. E. 1; S. 32.	Downtown, N. J. E. 1; S. 28.	Kennett Square, Pa. W. 36; S. 8.	Concordville, Pa. W. 20; S. 5.	Westtown, Pa. W. 21; S. 2.	West Chester, Pa. W. 24; N. 0.	Bordentown, N. J. E. 25; N. 13.	Yardville, N. J. E. 25; N. 15.	2 Miles Southeast Bordentown, N. J. E. 25; N. 16.	George School, Pa. E. 11; N. 18.	Doylestown, Pa. E. 1; N. 26.	Collegeville, Pa. W. 16; N. 16.	Trevorton, Pa. W. 81; N. 53.	Lopez, Pa. W. 69; N. 103.
Flicker.....	Mar. 23	Res.	Mar. 29	.....	Mar. 25	Mar. 22	Mar. 26	Mar. 15	.....	Mar. 31	Res.	Mar. 30	Mar. 29	Mar. 29	Apr. 23
Whip-poor-will.....	Apr. 27	Apr. 10	Apr. 24	.....	.....	.....	Apr. 14	Apr. 2	.....	May 1	.....	May 11	.....	May 4	May 1
Nighthawk.....	.....	May 12	.....	.....	.....	.....	.....	.....	.....	May 14	.....	May 20	May 10	May 9	.....
Chimney Swift.....	Apr. 27	Apr. 30	Apr. 30	Apr. 26	Apr. 26	Apr. 26	Apr. 26	Apr. 17	Apr. 30	Apr. 27	Apr. 20	Apr. 27	Apr. 26	May 2	May 20
Hummingbird.....	Apr. 30	May 11	.....	May 11	May 12	May 16	May 5	May 20	May 27	.....	May 13	.....	May 8	.....	.....
Kingbird.....	Apr. 24	May 1	May 6	May 11	Apr. 26	May 6	May 5	May 1	May 14	May 5	May 14	May 11	.....	May 16	May 20
Great-crested Flycatcher.....	Apr. 28	May 2	May 4	.....	May 6	May 2	May 7	May 2	May 11	May 6	May 9	May 14	May 8	.....	.....
Phoebe.....	Apr. 14	.....	.....	Mar. 21	Mar. 26	Mar. 19	.....	Mar. 28	Mar. 11	Mar. 22	Mar. 12	Mar. 22	Mar. 30	Mar. 30	Apr. 11
Bobolink.....	May 28	.....	May 12	May 12	May 3	May 7	May 3	.....	May 7	May 12	May 6	May 13	.....	May 21	May 11
Cowbird.....	Res.	.....	.....	Mar. 1	Mar. 18	Mar. 29	Mar. 10	.....	.....	Mar. 27	Mar. 12	Apr. 18	Apr. 1	.....	.....
Red-winged Blackbird.....	Feb. 27	Mar. 6	Mar. 12	Feb. 27	Mar. 1	Mar. 15	Feb. 26	Mar. 12	Mar. 10	Feb. 27	Mar. 12	Feb. 27	Mar. 24	Mar. 11	Mar. 18
Baltimore Oriole.....	May 2	May 4	May 12	May 2	May 3	May 2	May 5	May 14	May 9	May 7	May 2	May 4	May 15	.....	.....
Purple Grackle.....	Feb. 27	Mar. 6	.....	Feb. 25	Feb. 19	Feb. 27	Feb. 26	Feb. 26	Feb. 26	Feb. 26	Feb. 26	Feb. 26	Feb. 27	.....	.....
Chipping Sparrow.....	Mar. 30	Mar. 28	Apr. 7	Apr. 11	Apr. 7	Apr. 7	Mar. 27	Apr. 1	Mar. 23	Apr. 12	Apr. 10	Apr. 15	Apr. 12	Apr. 3	May 3
Indigobird.....	Mar. 11	Apr. 23	Apr. 23	Apr. 27	Apr. 29	Apr. 26	Apr. 16	Apr. 28	Apr. 26	Apr. 20	May 7	Apr. 15	Apr. 18	.....	May 9
Scarlet Tanager.....	May 6	May 4	May 11	May 11	May 11	May 5	May 7	May 11	May 14	May 18	May 11	May 13	.....	.....	May 13
Purple Martin.....	Apr. 6	May 5	Apr. 27	.....	Apr. 18	May 13	Apr. 5	Apr. 11	.....	.....	Apr. 8	.....	.....	.....	.....
Barn Swallow.....	Apr. 27	Apr. 16	May 15	Apr. 17	Apr. 22	Apr. 26	Apr. 25	Apr. 24	Apr. 23	Apr. 21	Apr. 30	Apr. 17	May 3	May 2	Apr. 26
Red-eyed Vireo.....	.....	Apr. 6	May 9	May 12	May 11	May 5	May 10	Apr. 30	.....	May 11	May 13	May 8	.....	.....	May 1
Black and White Warbler.....	Apr. 26	May 1	Apr. 30	.....	May 3	Apr. 27	Apr. 30	May 1	May 10	Apr. 24	May 7	Apr. 27	.....	.....	Apr. 29
Chestnut-sided Warbler.....	.....	.....	.....	.....	May 5	May 6	.....	May 2	May 16	.....	May 13	.....	.....	.....	May 11
Ovenbird.....	.....	May 9	May 5	May 1	May 1	Apr. 30	Apr. 28	May 10	.....	Apr. 29	May 13	.....	.....	.....	May 9
Maryland Yellow-throat.....	Apr. 27	May 1	Apr. 30	May 2	Apr. 30	May 1	May 2	Apr. 30	Apr. 29	May 6	May 11	May 13	.....	.....	.....
Chat.....	May 5	May 2	May 21	.....	May 5	May 7	May 14	May 2	May 9	May 7	.....	.....	.....	.....	.....
Catbird.....	Apr. 24	May 1	May 4	.....	May 2	May 1	May 2	Apr. 30	May 3	May 4	May 13	May 2	May 10	May 7	.....
Brown Thrasher.....	Apr. 27	Apr. 4	Apr. 24	Apr. 19	Apr. 19	Apr. 24	Apr. 28	Apr. 25	Apr. 26	Apr. 26	Apr. 26	Apr. 28	Apr. 27	May 3	May 1
House Wren.....	.....	May 1	Apr. 29	Apr. 28	Apr. 21	Apr. 26	Apr. 26	Apr. 26	Apr. 26	Apr. 26	Apr. 26	Apr. 29	May 2	May 2	May 5
Wood Thrush.....	Apr. 30	May 1	May 14	May 5	May 3	May 1	May 3	May 1	May 5	May 2	May 7	May 9	May 13	Apr. 27	.....
Hermist Thrush.....	.....	Apr. 13	.....	Apr. 17	Apr. 21	Apr. 25	Apr. 6	Apr. 30	.....	May 10	.....	Apr. 15	.....	.....	Apr. 12
Robin.....	Res.	Res.	Mar. 12	Feb. 26	Mar. 1	Feb. 26	Feb. 26	Mar. 2	Mar. 10	Mar. 4	Mar. 11	Mar. 9	Mar. 1	Mar. 12	Mar. 14
Bluebird.....	Res.	Res.	Feb. 27	Feb. 26	Feb. 19	Feb. 27	Feb. 26	Res.	Res.	Res.	Mar. 5	Feb. 28	Feb. 27	Mar. 18	Mar. 11

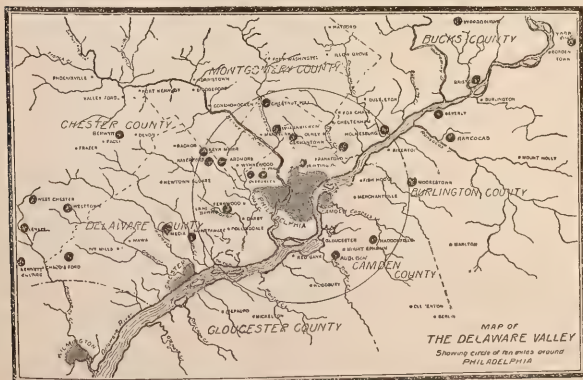


TABLE II.

SPRING MIGRATION, 1911.

EARLIEST DATES OF ARRIVAL OF THIRTY-TWO SPECIES AT FIFTEEN STATIONS OUTSIDE THE PHILADELPHIA CIRCLE.

*List of Other Species Reported by Observers During 1911, and
Additional Notes on Regular Migrants. Winter Notes
Refer to Winter of 1910-11, and Localities are
in Pennsylvania, unless Otherwise
Indicated.*

Horned Grebe, *Colymbus auritus*. Westtown, March 29 (*Hallett*); Buckshutem, N. J., Oct 28 (*Prince*).

Pied-billed Grebe, *Podilymbus podiceps*. Bridesburg, March 1 (*Miller*); Kennett Square, April 7 (*Pennock*).

Loon, *Gavia immer*. Fish House, April 25 (*Potter*); Cape May, N. J., all winter, first northern flight April 12 (*Hand*).

Herring Gull, *Larus argentatus*. Camden, N. J., Oct. 23-April 25 (*Potter*); Frankford, Sept. 19-May 6 (*Miller*); Wayne, two flying over, Feb. 25 (*Pearson*).

Laughing Gull, *Larus atricilla*. Cape May, N. J., April 30 (*Hand*); four at mouth of Maurice River, N. J., June 9 (*Prince*).

Common Tern, *Sterna hirundo*. Camden, N. J., Aug. 26, 1910, April 22, 23, 25 (*Potter*).

Wilson's Petrel, *Oceanites oceanicus* (presumably). Two at Maurice River Cove, Delaware Bay, N. J., June 9 (*Prince*).

Merganser, *Mergus americanus*. Fish House, N. J., last seen May 20 (*Potter*); Cape May, N. J., all winter, first northward flight March 23 (*Hand*).

Black Duck, *Anas rubripes tristis*. Bridesburg, March 9 (*Miller*); Buckshutem, N. J., old birds with young, May 5 (*Prince*); Cape May, N. J., all winter, most numerous about Great Sound, where there was a flock of probably 1500 (*Hand*).

Green-winged Teal, *Nettion carolinense*. Cape May, N. J., seven shot in harbor Dec. 12, 1910, first record I have (*Hand*).

Redhead, *Marila americana*. Fish House, N. J., April 22, 23, May 4 (*Potter*).

Lesser Scaup, *Marila affinis*. Fish House, N. J., March 25-May 14 (*Potter*); Buckshutem, N. J., Nov. 25 (*Prince*).

Old-squaw, *Harelda hyemalis*. Cape May, N. J. Very scarce, hunted by gunners in launches until they have nearly all left our waters; saw none on a gunning trip Dec. 25-30, 1911, where formerly they were plentiful (*Hand*).

Canada Goose, *Branta canadensis canadensis*. Cape May, N. J., 40-50, Dec. 27, 1911 (*Hand*).

Bittern, *Botaurus lentiginosus*. Tinicum, May 4 (*Miller*); Wayne, April 23 (*Pearson*); Yardville, N. J., May 18 (*Allinson*).

Least Bittern, *Ixobrychus exilis*. Eggs hatching in nest at Richmond, Phila., May 31 (*Miller*).

Little Blue Heron (white plumage), *Florida caerulea*. Cape May, N. J., observed during August and September, sometimes as many as five together (*Hand*).

Great Blue Heron, *Ardea herodias*. Moorestown, N. J., Mar. 22 (*Mickle*); Buckshutem, N. J., a few all winter (*Prince*); Wayne, April 23 (*Pearson*); Concordville, May 10 (*Styer*); Westtown, March 29 (*Hallett*); Cape May, N. J., Dec. 30, 1911 (*Hand*).

Night Heron, *Nycticorax nycticorax naevius*. Camden, N. J., Dec. 13, 1910 (*Potter*).

Clapper Rail, *Rallus crepitans crepitans*. Cape May, N. J., three on Dec. 7, 1910; arrived in spring, March 14 (*Hand*).

Virginia Rail, *Rallus virginianus*. Cape May, N. J., Dec. 12 and 26, 1910 (*Hand*).

Florida Gallinule, *Gallinula galeata*. Arrived at Richmond, Phila., April 25; had eggs May 31. Owing to the filling in of the marsh only 4 or 5 pairs bred this year (*Miller*).

Coot, *Fulica americana*. Fish House, N. J., April 22, 23, 25 and 27 (*Potter*).

Woodcock, *Philohela minor*. Frankford, March 23; Essington, May 4 (*Miller*); West Creek, N. J., four young just out of the egg May 6 (*Stone*); Cape May, N. J., large flight Dec. 8-14, 1910. Many in town, very thin and weak; no marked flight in autumn of 1911, probably because there were no light north-west winds at the time of their migration (*Hand*).

Wilson's Snipe, *Gallinago delicata*. Tinicum, March 18 (*Miller*); Wayne, May 7 (*Pearson*); Kennett Square, April 11 (*Pennock*); Westtown, one pair March 19-26 (*Hallett*); Buckshutem, May 4 (*Prince*); Cape May, N. J., March 14 (*Hand*).

Least Sandpiper, *Pisobia minutilla*. Camden, N. J., May 15, 21 (*Potter*); Westtown, May 22 and Brinton's Dam May 13 (*Hallett*).

Red-backed Sandpiper, *Pelidna alpina sakhalina*. Flocks of 500 of these birds and sanderlings seen above Cape May, N. J., Dec. 25-30, 1911; first migrants at Cape May Apr. 29, 1911 (*Hand*).

Sanderling, *Calidris leucophaea*. At Cape May, N. J., with the preceding, Dec. 25-30, 1911 (*Hand*).

Greater Yellow-legs, *Totanus melanoleucus*. West Chester, April 24 (*Roberts*); Buckshutem, N. J., May 21 (*Prince*); Camden, N. J., April 22 (*Potter*); Cape May, N. J., March 14 (*Hand*).

Field Plover, *Bartramia longicauda*. Doylestown, May 14 (*Mason*); Cape May, N. J., April 24 (*Hand*).

Hudsonian Curlew, *Numenius hudsonicus*. Cape May, N. J., April 17 (*Hand*).

Killdeer, *Oxyechus vociferus*. Camden, N. J., Dec. 18, 1910 (*Potter*); nest with 4 eggs Buckshutem, N. J., April 24 (*Prince*); at least four pairs bred in northeastern Philadelphia (*Miller*).

Semipalmated Plover, *Aegialitis semipalmata*. Cape May, N. J., March 30 (*Hand*).

Piping Plover, *Aegialitis meloda*. Ad. ♂ collected at Ocean City, N. J., Aug. 3, 1899 (*Moore*) (Coll. R. T. Moore). Apparently last record for New Jersey.

Turnstone, *Arenaria interpres morinella*. Cape May, N. J., April 29 (*Hand*).

Red-tailed Hawk, *Buteo borealis borealis*. Camden, N. J., last seen March 11 (*Potter*).

Black Hawk, *Archibuteo lagopus sancti-johannis*. Bridesburg, March 1 (*Miller*).

Bald Eagle, *Haliaeetus leucocephalus leucocephalus*. Maurice River, N. J., May 4 (*Prince*); Cape May, N. J., Dec. 30, 1911 (*Hand*); Dias Creek, N. J., May 28 (*Fowler*).

Barn Owl, *Aluco pratincola*. Westtown, at least one family resident (*Hallett*); one seen in Woodland Cemetery, Phila., April 10 (*Pearson*); April 28 (*Hill*).

Long-eared Owl, *Asio wilsonianus*. Orchard, N. J., nest with four young, May 19, 1911 (*Moore*); now in D. V. O. C. collection.

Short-eared Owl, *Asio flammeus*. Camden, N. J., Nov. 26, 1910 (*Potter*).

Black-billed Cuckoo, *Coccyzus erythrophthalmus*. One found dead at Moorestown, N. J., June 17 (Mickle).

Hairy Woodpecker, *Dryobates villosus villosus*. Moorestown, N. J., March 26 (Mickle); Holmesburg, half-grown young, May 17 (Miller).

Phoebe, *Sayornis phoebe*. Londongrove, one on Dec. 12 and 13, 1910, when ground was covered with snow and temperature 2° to 10° F. (Roberts).

Olive-sided Flycatcher, *Nuttallornis borealis*. Arrived Lopez, May 18 (Behr).

Acadian Flycatcher, *Empidonax virescens*. Nest with three eggs, North Wildwood, N. J., May 31, 1905 (Moore).

Horned Lark, *Otocoris alpestris alpestris*, Camden, N. J., Feb. 22, a flock (Potter); Richmond, Phila., Dec. 23, a flock (Miller); Collegeville, Feb. 22, flock of 50 (Fox); West Chester, Feb. 23, flock of 20 (Roberts); Concordville, Feb. 21, flock (Styer). Occurrences followed a four-inch snowfall on Feb. 20.

Blue Jay, *Cyanocitta cristata cristata*. Frankford, not observed till May (Miller); none at Westtown until March 26 (Hallett).

Fish Crow, *Corvus ossifragus*. Bristol, several Feb. 5-26 (Fowler); Dias Creek, N. J., May 28 (Fowler); nest and eggs, Frankford, May 4 (Miller).

Starling, *Sturnus vulgaris*, Moorestown, N. J. All winter in flocks of 5 or 6, nested nearby, and Starling families were frequently seen on the lawn with Red-winged Blackbirds during spring (Mickle); large flocks seen at Camden, N. J., during the winter, five nests, spring of 1910 (Potter); Woodland Cemetery, W. Phila., one pair frequently seen during winter, also bred, young fledged, May 23 (Pearson). Big flock seen now and then all winter at Frankford, nests examined at Frankford (3), Holmesburg, Bustleton (2), Andalusia and Woodbury, N. J., all but one with young. One Bustleton nest contained a second set of eggs, June 25 (Miller); March 11 to end of April, four at Yardville, N. J., and later said to have nested in the vicinity (Allison); Cape May, N. J., rapidly increasing, flocks of over 100 seen (Hand).

Rusty Blackbird, *Euphagus carolinus*, Camden, N. J., Dec. 25, 1910 (Potter); West Chester, Nov. 4, 1910 (Roberts).

Purple Finch, *Carpodacus purpureus purpureus*, Wayne, March 26–May 7 (*Pearson*); last seen, Camden, N. J., May 7 (*Potter*); Concordville, May 3 (*Styer*); Westtown, May 5 (*Hallett*); Lansdowne, April 24 (*Nicholson*); West Chester, May 8 (full song) (*Roberts*).

Redpoll, *Acanthis linaria linaria*, Camden, N. J., Dec. 25, 1910 (*Potter*).

Gold Finch, *Astragalinus tristis tristis*, Moorestown, N. J., in large flocks, May 26–May 9 (*Mickle*).

Pine Siskin, *Spinus pinus*, Westtown, flock of 15, March 18 (*Hallett*); Lansdowne, May 10 (*Jacob*); Wayne, frequent March 5–April 30, and three on May 21 (*Pearson*).

Vesper Sparrow, *Poocetes gramineus gramineus*, West Chester, Dec. 19, 1910 (*Roberts*).

Henslow's Sparrow, *Passerherbulus henslowi henslowi*, Bucks-hutem, N. J., resident all summer in uncultivated meadows along the Maurice River (*Prince*).

White-throated Sparrow, *Zonotrichia albicollis*, Moorestown, N. J., Oct. 10–May 12 (*Mickle*); Lansdowne, Oct. 10–May 10 (*Jacob*); Wayne, Sept. 28–May 7 (*Baker, Pearson*); W. Phila., Sept. 22–May 17 (*Hill*); Frankford, Sept. 15–May 19 (*Miller*); West Chester, Oct. 2–May 7 (*Roberts*); Vineland, N. J., Oct. 10–May 3 (*Prince*); last seen at Camden, N. J., May 14 (*Potter*); Concordville, May 13 (*Styer*); Kennett Square, May 12 (*Pen-nock*); Westtown, May 20 (*Hallett*); Holmesburg, May 5 (*Fowler*).

White-crowned Sparrow, *Zonotrichia leucophrys leucophrys*. Concordville, May 10 (*Styer*).

Tree Sparrow, *Spizella monticola monticola*. Last seen, Holmesburg, March 12 (*Fowler*); Camden, N. J., April 4 (*Potter*); West Chester, Nov. 11–April 10 (*Roberts*); Frankford, Sept. 29–April 16 (*Miller*).

Junco, *Junco hyemalis hyemalis*. Moorestown, N. J., Oct. 13–April 26 (*Mickle, Haines*); Wayne, Oct. 11–April 23 (*Baker, Pearson*); Frankford, Oct. 3–April 26 (*Miller*); Yardville, N. J., Oct. 30–March 19 (*Allinson*); Bordentown, N. J., Sept. 10–April 15 (*Flynn*); West Chester, Oct. 13–April 25 (*Roberts*); Downtown, Oct. 2–April 23 (*Fair*); Vineland, N. J., Oct. 10–April 14

(Prince). Arrived Rancocas, N. J., Oct. 17 (Haines). Last seen, Holmesburg, April 9 (Fowler); Lansdowne, April 24 (Nicholson); Westtown, May 9 (Hallett).

Song Sparrow, *Melospiza melodia melodia*. Lansdowne, March 25, one bird with very abnormal song, not like the normal one in any way. Same bird heard a year ago (Carter).

Swamp Sparrow, *Melospiza georgiana*. One wintered at Wayne (Pearson).

Cardinal, *Cardinalis cardinalis cardinalis*. Collegeville, frequent in ravines (Fox).

Rose-breasted Grosbeak, *Zamelodia ludoviciana*. Camden, N. J., June 17 (Potter).

Scarlet Tanager, *Piranga erythromelas*. Nest at Bustleton, July 18. An earlier nest was built in the same tree (Miller).

Purple Martin, *Progne subis subis*. Last seen at Moorestown, N. J., Sept. 7, 1910, flock of 40 (Mickle).

Northern Shrike, *Lanius borealis*. Moorestown, N. J., Dec. 4 (Mickle); Tinicum, March 18 (Miller); Vineland, N. J., April 29 (Prince).

Migrant Shrike, *Lanius ludovicianus migrans*. Blackwood, N. J., April 6 (Moore); Delaware City, Del., Dec. 9, 1911, shot (Trotter).

Blue-winged Warbler, *Vermivora pinus*. Fox Chase, nest and eggs, May 25 (Miller).

Nashville Warbler, *Vermivora rubricapilla rubricapilla*. Wayne, May 7 (Pearson); Doylestown, May 10 (Mason); West Chester, May 3 (Roberts).

Tennessee Warbler, *Vermivora peregrina*. Concordville, May 6 (Styer).

Cape May Warbler, *Dendroica tigrina*. Doylestown, May 9 (Mason); West Chester, May 11, a number (Roberts); Kennett Square, two on May 14 (Pennock); Haddonfield, N. J., one Oct. 11, 1911, and one found dead and prepared Oct. 14, 1911 (Moore).

Bay-breasted Warbler, *Dendroica castanea*. Ardmore, May 14 (Baily).

Pine Warbler, *Dendroica vigorsii*. Nest and four eggs, East

Hammonton, N. J., May 20, 1911 (*Moore*). Now in D. V. O. C. collection.

Kentucky Warbler, *Oporornis formosus*. Eggs at Rockledge, Philadelphia, May 25 (*Miller*).

Hooded Warbler, *Wilsonia citrina*. Haverford, Sept. 17 (*Serrill*).

Wilson's Warbler, *Wilsonia pusilla pusilla*. Doylestown, May 14 (*Mason*); Buckshutem, May 6 (*Prince*); Haverford, May 9 (*Serrill*).

Pipit, *Anthus rubescens*. Camden, N. J., Nov. 6, 1910 (*Potter*); five at Doylestown, April 30 (*Mason*); below Trenton, N. J., March 13 (*Abbott*).

Mockingbird, *Mimus polyglottos polyglottos*. Pair nested in Cape May City, N. J. (*Hand*); One seen June 29, at Cape May Pt., by R. A. Spaeth who found a nest there in June 1899, containing four eggs. One of them was taken and the birds thereupon deserted the nest.

Carolina Wren, *Thryothorus ludovicianus ludovicianus*. Young out of nest Moorestown, N. J., May 8 (*Linton*).

Winter Wren, *Nannus hiemalis hiemalis*. Last seen Wayne, April 23 (*Pearson*); W. Phila., April 10 (*Pearson*); Westtown, April 26 (*Hallett*).

Brown Creeper, *Certhia familiaris americana*. Moorestown, N. J., Dec. 18-Jan. 22 (*Mickle*); Wayne, Oct. 10 (*Baker*); Frankford, Sept. 24-April 25 (*Miller*); West Chester, Oct. 16-April 9 (*Roberts*); Vineland, N. J., Oct. 15-April 25 (*Prince*); Last seen at Camden, April 26 (*Potter*); Wayne, April 21 (*Pearson*); W. Phila., common April 9-26 (*Hill*); Westtown, April 25 (*Hallett*); Holmesburg, April 9 (*Fowler*).

Red-breasted Nuthatch, *Sitta canadensis*. Camden, N. J., Oct. 12, 1910, May 6-7, 1911 (*Potter*); Woodbury, N. J., May 7 (*Miller*); West Chester, May 9 (*Roberts*).

Black-capped Chickadee, *Penthestes atricapillus atricapillus*. Wayne, Oct. 9 (*Baker*); March 12 (*Pearson*); Westtown, seen but once late fall 1910 (*Hallett*).

Golden-crowned Kinglet, *Regulus satrapa satrapa*. Moorestown, N. J., Oct. 29 (*Mickle*); to April 26 (*Haines*); Ardmore,

April 2, common for several days (*Baily*); Wayne, Oct. 9–April 6 (*Pearson*); W. Phila. April 9–20 (*Hill*).

Blue-gray Gnatcatcher, *Poliophtila coerulea coerulea*. Dias Creek, N. J. saw six May 28 (*Hand* and *Fowler*).

Hermit Thrush, *Hylocichla guttata pallasii*. One all winter at Rancocas, N. J. (*Haines*), Haverford Dec. 15, Jan. 10, Feb. 19, 26, Mar. 4 (*Serrill*), one all winter, Univ. of Pa. botanic garden W. Phila. (*Pearson*) Lansdowne singing subdued song Feb. 19 to April 7 (*Carter*).

Abstract of the Proceedings of the Delaware Valley Ornithological Club, 1911

January 5, 1911. Twenty-first Annual Meeting. Thirty members present. The following officers were elected for the ensuing year:

President. Samuel N. Rhoads.

Vice-President. Stewardson Brown.

Secretary. J. Fletcher Street.

Treasurer. Samuel Wright.

The meeting was devoted to the reading of bird biographies by members. The life story of the Red-eyed Vireo was read by Mr. Morris, that of the Orchard Oriole by Mr. Rhoads, and that of the Fox Sparrow by Dr. Weygandt. The meeting adjourned to the annual collation.

January 19, 1911. Fifteen members and two visitors present. Mr. William E. Roberts addressed the Club on "A Trip across Canada," giving an interesting account of an extended trip among the mountains of British Columbia. His talk was supplemented by lantern slides.

February 2, 1911. Eleven members present. Mr. Baily first addressed the Club upon a subject entitled "Scraps," being a summary of his past summer's observations at Belgrade Lake, Maine, the Saguenay River, Quebec, and at Tuckahoe, N. J. Mr. Morris followed with an account of a canoe trip made during June of 1910 in the region of the upper Delaware. The unusual abundance of the birds of prey impressed the speaker, a number of Bald Eagles being observed. General discussion followed on the breeding of the Great Blue Heron in the mountain-regions of the East. Mr. Stone read a biographical sketch of William Gambel.

February 16, 1911. Fourteen members present. Mr. Rehn spoke concerning "Some Western Birds and Their Home Lands", describing a trip across the northern states, down along the mountains of the Pacific coast, over to the Catalina Islands, thence following the Mexican border into Arizona and New Mexico. The talk was illustrated by a series of interesting slides, showing the character of country traversed. Mr. Hill reported a Fox Sparrow and Field Sparrows at Rose Valley on January 9, 1911.

March 2, 1911. Sixteen members present. Julian K. Potter, J. D. Kuser, Stephen Fuguet, Frederick Oldack and Jesse Packer were elected to associate membership. E. Butler, S. W. Cole and M. A. Linton were dropped from membership for non-payment of dues.

Mr. Stone gave an instructive talk on the family of Thrushes (*Turdidae*), discussing their relationships, distribution, etc. Specimens from the Academy's collection were on exhibit.

Mr. Potter reported Starlings (*Sturnus vulgaris*) associated with Red-winged Blackbirds near Camden on Feb. 19, 1911. Mr. Rehn reported a Bald Eagle observed at Stafford's Forge on Feb. 25, 1911. Mr. Otto Behr reported a flock of fifty Canada Geese seen at Lopez, Pa., on Feb. 14, 1911.

March 16, 1911. Eleven members present. The meeting was devoted to discussion on "Recording Bird Migration and Other Field Observations". Mr. Stone reviewed the method employed to determine correctly the bulk-arrival of the several species, impressing the members with the necessity of a large number of observers to properly carry this into effect.

Mr. Street made a few remarks on the causes of mortality among nest birds. Mr. Stone expressed himself as of the belief that in many instances color pattern was fundamentally more important than structural characteristics in determining relationships among the genera of birds.

April 6, 1911. Twenty-two members present. Mr. Stone read a letter from Mrs. Winebreuer describing the occurrence of Evening Grosbeaks and Bohemian Waxwings at Bushkill, Monroe Co., Pa. The Grosbeaks were observed from February 7th

to March 23d, 1911, and the Bohemian Waxwings on March 7th and 16th. Mr. Anthony W. Robinson entertained the Club with a communication describing a trip across the continent from Chicago to San Francisco. His remarks pertained principally to observations made in the Yellowstone Park and California. The talk was illustrated with lantern slides.

Mr. Hill reported a Chewink observed at Woodland Cemetery on March 26th, and Mr. Moore a Loggerhead Shrike at Blackwood, N. J.; on April 6th.

April 20, 1911. Nineteen members present. Dr. Trotter read a biographical sketch of the late Alfred Newton written by Arthur Benson. The subject-matter related particularly to the associations of the author with Newton during the period of Newton's connection with Cambridge University. Under the subject "Some New Light on the Theory of Protective Coloration," Mr. Stone read extracts from an article in the current number of the "Auk" by Thos. Barbour and John C. Phillips in criticism of some of the theories of protective coloration in birds expounded by Mr. Abbott H. Thayer in his book, "Concealing Coloration." A letter from Mr. Sharpless, of West Chester, was read by Mr. Stone, which mentioned the procuring of a maimed Ring-billed Gull (*Larus delawarensis*). Mr. Stone exhibited a specimen of an immature Yellow-bellied Sapsucker secured by Mr. R. E. Morris. The bird possessed a certain amount of red feathers at the base of the bill, an unusual characteristic in the plumage of the young of this species.

May 4, 1911. Fourteen members present. Mr. Robert T. Moore gave an illustrated talk on a trip to Florida during the past winter. The bird-life about Tampa and the neighboring keys was particularly described. Mr. Potter reported a flock of about forty Common Terns (*Sterna hirundo*) on the Delaware at Camden, N. J., on April 23. Mr. Moore reported the White-crowned Sparrow under date of May 1st, and the Golden-winged Warbler on May 3d, from Haddonfield, N. J. Mr. Rehn reported for Mr. Charles Liebeck a Northern Phalarope secured on the river below Philadelphia on May 22, 1910.

May 18, 1911. Twenty-nine members and two visitors pres-

ent. Mr. Brown addressed the Club on the subject "Birds of Northern Venezuela". His remarks were descriptive of an extended trip in the delta country of the Orinoco River and the neighboring savannas. The life and habits of such species as the Blue and Yellow Macaw, Hoatzin, Sun Bittern and Cacique were described. Mr. Stone reported a Lincoln Sparrow secured at Walnut Hill, Pa., on May 13th by Mr. Robert E. Morris, and a Northern Phalarope secured at Cape May, N. J., on May 16th by Walker Hand. Mr. Pennock reported Golden-winged Warblers observed at New Castle, Del., on May 6th, and Cape May Warblers on May 12th at Kennett Square, Pa.

October 5, 1911. Twenty-two members and two visitors present. The deaths of two associate members of the Club were announced and the following resolutions were adopted:

"The members of the Delaware Valley Ornithological Club have heard with deep sorrow of the untimely death of their associate, Ernest M. Evans, and desire to extend to his family their sincere sympathy. Ernest was one of those young men whose love of outdoor life and appreciation of the spirit of good fellowship have made the Club what it is, while his sincerity and lovable disposition endeared him to us all."

"The members of the Delaware Valley Ornithological Club have heard with deep sorrow of the death of their associate member, Francis W. Rawle, Jr. They realize that each, individually has lost a true friend and the Club a staunch supporter. Mr. Rawle's recent, valuable gifts to the Club's collection and his generous support of 'Cassinia' have benefited not only the Club but all those interested in local bird-study."

Under the general subject, "Some Summer Experiences", a number of the members described recent experiences of ornithological interest. Mr. Morris mentioned observing Loggerhead Shrike at Bridesburg during July. Mr. Stone announced that Mr. Robert E. Morris had obtained last spring a number of specimens of the Philadelphia Vireo and Mourning Warbler in the vicinity of Philadelphia. Mr. Moore reported that he obtained a nest of the Pine Warbler at East Hammonton on May 20th. Mr. Pennock and Mr. Carter observed the Lawr-

ence's Warbler in the vicinity of Nottingham Sta., Chester Co., Pa. on June 26th.

October 19, 1911. Twenty-three members and five visitors present. Mr. O. E. Baynard exhibited a series of slides, depicting "Life in Central Florida Heron Rookeries." These included many excellent views of the White and the Glossy Ibises, American Egrets and Snakebirds at home. Under the subject "A Preliminary Summary of a Trip to Ecuador", Mr. Rhoads gave a general survey of a trip to the western part of Ecuador. Specimens of birds were secured with difficulty and the absence of large mammals was marked. Mr. Moore reported a Cape May Warbler seen at Haddonfield on October 11th and another found dead by Miss Virginia Whitecar at the same station on October 14th.

November 2, 1911. Nineteen members present. Messrs. Robert T. Moore and Samuel C. Palmers were elected active members and Albert L. Bailly, Jr., George Hallett and George Beatty, Jr., associates. William B. Crispin and O. E. Baynard were elected to corresponding membership.

Dr. Trotter spoke on "Some Summer Birds of St. Margaret's Bay, Nova Scotia". Dr. Trotter stated that the Hermit Thrush was the common Thrush of the burnt areas, while in the heavy timber it was replaced entirely by the Olived-backed Thrush. The Palm Warbler was the most common of the warbler group. Mr. Bailly recorded the collection of a Connecticut Warbler at Mt. Pocono in September last.

November 16, 1911. The semi-monthly meeting was omitted on account of the convention of the American Ornithologists' Union in session at the Academy of Natural Sciences. The meetings of the Union were held daily from November 14th to 16th inclusive. These were open to the public, consequently a number of the club members availed themselves of this opportunity to hear interesting and instructive papers on the subject of general ornithology. On Wednesday evening, November 15th, under the auspices of the D. V. O. C., an informal reception and smoker was tendered to the visiting ornithologists in the ornithological rooms of the Academy.

December 7, 1911. Eighteen members and two visitors present, meeting held in conjunction with the Ornithological Section of the Academy. Mr. Stone made mention of the additions which had been made during the year to the Academy's collection of birds. Owing to ill health Mr. Samuel Wright presented his resignation as Treasurer, which was accepted with regrets. Mr. Samuel C. Palmer was nominated and duly elected to fill the vacancy. Mr. Stone exhibited a specimen of a young Franklin's Gull (*Larus franklini*) shot Oct. 22, 1911 in the lower part of Philadelphia by Charles Liebeck. This is the first record of the bird for Pennsylvania. Mr. Potter recorded a Mocking Bird from Fish House, N. J. on Nov. 6th.

December 21, 1911. Twenty-two members and two visitors present. Mr. Rhoads addressed the Club on the subject "Birds of the Tierra Caliente of Ecuador". His remarks were supplementary to a general survey of the subject made before the Club at an earlier session. Mr. Rhoads described the Tierra Caliente as a broad, coastal plain with an average width of fifty miles and an elevation of 1000 feet. The temperature is fairly moderate. Many birds of prey of various kinds and such species as the Toucan, Mot-mot, Parrot and a large number of the Formicaridae were observed. Mr. Rhoads' complete collection of birds secured upon this trip has been acquired by the Academy. Mr. Moore reported that he had found in his collection a specimen of Piping Plover, secured at Ocean City, N. J. on Aug. 3, 1899. This is believed to be the latest record for the state. Mr. Moore observed a Northern Shrike at Milford, N. J. on Nov. 30. Mr. DeHaven secured a Gannet at Cape Charles, Virginia on Dec. 12, 1911.

Club Notes.

With the call of Mr. Witmer Stone to the editorial chair of the 'Auk,' 'Cassinia' suffered a great loss, which at the moment seemed irreparable. For two decades he has guided all the publications of the D. V. O. C., first as chairman of its Publication Committee, which brought to light the Proceedings from 1890 to 1900, then as editor of 'The Birds of Eastern Pennsylvania and New Jersey,' and finally in the same capacity for 'Cassinia' during the ten years of its existence. That each of these ventures has proved successful, has been due largely to his tireless energy, his steady enthusiasm, and wise control at moments of stress. Whether at the helm of 'Cassinia' or on the floor of the Club, it was he that suggested and encouraged, it was he that pressed for completion. Only just and fitting, therefore, it is that the D. V. O. C. should express at this hour its respect for his attainments and appreciation of his services. With deep regret and some foreboding for the future we heard that his official duties on the 'Auk' would compel him to resign the editorship of 'Cassinia.' Quite irreparable would our loss have been, had we not been assured of his constant advice and assistance in the guidance of this publication.

The new incumbent enters upon his duties with some misgiving, being fully aware that the best he can hope to accomplish is the maintenance of the standard set by the retiring editor. What that standard has been is obvious to anyone acquainted with our past issues. It demands from all papers accepted first of all, an authentic statement of facts, and second, their presentment in a style, possessing at least clearness and readability, if not some literary merit. This simple standard cannot be bettered for a magazine of this kind and to keep it at this level of excellence is the aim of the present editor. If he succeeds, he will feel that this in itself is an achievement. From time to

time it will be necessary to introduce slight changes—a department of General Notes in this issue—but these will not be indicative of vaulting ambition that leaps before necessity, but of conservative effort to solve immediate problems and provide space for cramped energies.

The D. V. O. C. has reached a stage, when it bulks large, not only in size, but also in quality of membership. With such a corps of trained observers there should be little difficulty in getting valuable material for future issues. I know, of late, there has been a tendency to belittle the chances of adding to the knowledge of the birds of this region, to believe, because so much has been accomplished in the timing of migratorial movements, the determining of distribution, the plotting of faunal areas, that little is left for the younger generation. I, for one, am confident that this belief is without foundation. It is true that the searcher for new species will shoot in vain, that the blower of shells will note his consuming fad depreciated more and more, that the maker of mere lists will find his wares unsalable; but this will simply mean that the age of the indefatigable observer has arrived. The work of the past has been hardly more than foundational. The superstructure of life-histories has just been begun. There is not one species whose vital statistics have been completed! The consecutive history of a single individual year after year has hardly been attempted! We have exhaustive studies of birds' feathers, we have learned little of how they fly; we know much of throat mechanism, we know practically nothing of bird-songs! The past, splendid as it has been, has not made effort useless, it has merely swamped out the main road into the wilderness, whose pleasant by-paths it shall be our duty to cut, and so reveal secrets unsuspected. With perfect faith, therefore, in the future, the editor looks forward to renewed activity on the part of every member of the D. V. O. C. in the study of these elusive creatures of wing. Indefatigable study, rather than general observation, should be our watchword for the coming year. The exhaustive study of details will reap an unexpected harvest and will provide a surplus of products, so that subsequent issues of 'Cassinia' will be thoroughly representative of such a splendid organization.

Fifteen meetings were held by the Club during the year, the average attendance being nineteen.

* * *

At the A. O. U. meeting held at the Academy of Natural Sciences seven papers were presented by Club members, by Baily, Brown, Moore, Rhoads, and Trotter. A reception was given to the members of the A. O. U. by Mr. and Mrs. Wm. L. Baily at their home in Ardmore.

* * *

Club members were unusually energetic this year in activities outside of the Delaware Valley. Brown commanded a Philabustering expedition to Venezuela, Rhoads fought fever-laden mosquitoes in Ecuador in order to present the revolutionists with a new type of arms, Trotter retired again to the solitudes of Nova Scotia, Rehn played tag with the grasshoppers of Florida, Baily and Moore learned how to cook in the Magdalen Islands.

* * *

For the portrait of Rafinesque the Club is indebted to Mr. S. N. Rhoads and for the two views along the Pocomoke to Mr. George Spencer Morris.

* * *

FRANCIS WILLIAM RAWLE

1873-1911

Francis William Rawle, an Associate Member of the Club, as well as of the American Ornithologists' Union, died after a short illness on June 12, 1911. He was born at Rosemont, Pa., September 22, 1873, and was educated at the Haverford College Grammar School, Phillips Exeter Academy and Williams College, where he graduated in 1895. Later he studied law, receiving degrees from Harvard in 1897 and Pennsylvania in 1898, after which he practiced his profession in Philadelphia.

From boyhood Mr. Rawle had been intensely interested in the study of natural history, especially of birds, upon which subject he had formed an exceptionally fine library. Although not a


regular attendant at the D. V. O. C. meetings, he was deeply interested in the Club and its work and was one of its most generous and earnest supporters. Shortly before his death he presented a beautifully mounted series of local birds to the D. V. O. C. which practically completed its local collection. Mr. Rawle endeared himself to all with whom he came in contact and in his death, we realize, the Club has lost a valuable member and a generous supporter, while the members will miss a true friend.

ERNEST MERWYN EVANS

1884-1911

Ernest Evans joined the Club as an Associate Member in 1899, at the age of fifteen. As a boy he early showed a deep love for nature and out-door life—a love which never left him—though he did not become an active member of the Club, nor during the later years of his life was he able to devote much time to the serious study of ornithology. He was, however, a keen observer and took much interest in recording the arrival and departure of the birds and their nesting habits around his beautiful home at "Awbury", Germantown. While at school and college he spent many summers with his family on Conanicut Island, Narragansett Bay, and was always greatly interested in the birds of that section of Rhode Island.

Ernest Evans's sudden and tragic death revealed him a true hero to all; but to those, who were privileged to know him best, he will ever be remembered as a young man of great uprightness and strength of character, combined with a rare thoughtfulness for others and a certain gentleness of spirit, which seldom expressed itself more perfectly than in his appreciation of Nature and of Nature's songsters.



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OFFICERS AND MEMBERS

OF THE

Delaware Valley Ornithological Club.

1912.

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J. JAY WISLER, Columbia, Pa.	1904
ROBERT T. YOUNG, State University, N. Dakota.	1892

DECEASED MEMBERS.

Died.

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WALTER D. BUSH, Corresponding member.	August 11, 1904
JOHN W. DETWILLER, M. D., Corresponding member.	September 26, 1898
ERNEST M. EVANS, Associate member.	June 29, 1911
LARUE K. HOLMES, Corresponding member.	May 10, 1900
JOSIAH HOOPER, Corresponding member.	January 16, 1904
AUGUST KOCH, Corresponding member.	February 15, 1907
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FREDERICK N. OWEN, Associate member.	December 27, 1905
WILLIAM PATTERSON, Corresponding member.	August 27, 1900
FRANCIS W. RAWLE, Associate member.	June 12, 1911
EDWIN SHEPPARD, Associate member.	April 7, 1904
WILLIAM W. SMITH, Associate member.	July 3, 1892
SAMUEL W. WOODHOUSE, M. D., Honorary member.	October 23, 1904

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Every mention of a bird, either by common or technical name, *except* in the migration report, is indexed under the current technical name of the species.

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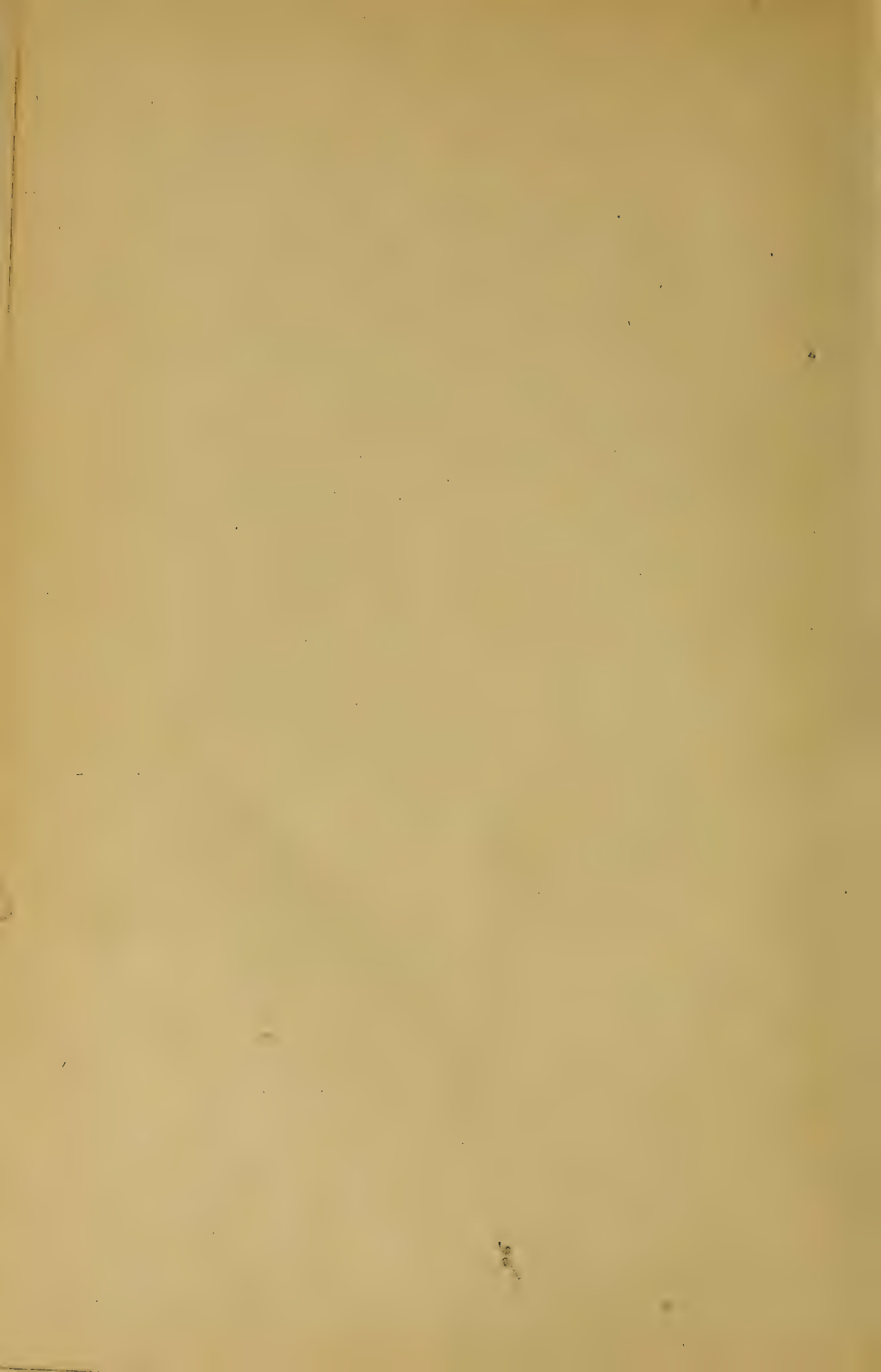
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